OFFICIAL YEAR BOOK

OF

WESTERN AUSTRALIA

No. 4 1964



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Users are warned that this historic issue of this publication series may contain language or views which, reflecting the authors' attitudes or that of the period in which the item was written, may be considered to be inappropriate or offensive today.

CHRISTMAS TREE (*Nuytsia floribunda*)

Nuytsia floribunda is the largest member of the mistletoe family and is a root parasite. It occurs in coastal areas southward from the Murchison River and eastward to Cape Arid, on the south coast east of Esperance, and extends inland as far as Tammin. It rarely reproduces itself from seed, but forms small colonies of apparently independent trees which are connected by underground stems. The generic name commemorates Pieter Nuyts, a member of the party aboard the Dutch vessel "Gulden Zeepard" which made a close examination of the southern coastline in 1627.



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COMMONWEALTH BUREAU OF CENSUS AND STATISTICS
WESTERN AUSTRALIAN OFFICE

OFFICIAL YEAR BOOK
OF
WESTERN AUSTRALIA
1964

No. 4 (NEW SERIES)



R. J. LITTLE
Deputy Commonwealth Statistician
and
Government Statistician

ALEX. B. DAVIES Government Printer, Western Australia.
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PREFACE

This issue of the *Official Year Book of Western Australia* is the fourth of a new series. The old series, originally published for the year 1886 and discontinued in 1905, developed from the Blue Books of the Colonial Office, London, which contain the early statistical records of Western Australia.

The aim of the Year Book is to provide a general description of the State of Western Australia and its development, in terms of its geography, climate and geology, the plants and trees which grow on its surface, its animal life, and the activities and social patterns of its people in relation to this physical environment. Ample use has been made of statistical tables to supplement the descriptive text and to give a numerical account of what has been happening in the several fields of production, trade and commerce, population and social condition, the functions of government, and so on. A list of illustrations, in the form of plates, graphs and maps, and a synopsis of the contents are given in the opening pages.

The statistical tables in this issue relate in the main to periods ended the 30th June, or the 31st December, 1962, but much of the descriptive matter incorporates the effect of later Commonwealth and State legislation or administrative decisions, and some recent developments are dealt with in the *Appendix*. Statistics up to the 31st December, 1963 are given in the *Statistical Summary* following the main chapters. A wide range of current statistics is available in the perodical publications produced by this Office in printed or mimeographed form, and listed at the back of the Book, as well as in the various publications issued by the Commonwealth Statistician, Canberra.

My thanks are again expressed to the many Government officials and others who willingly collaborated in the preparation of letterpress or in the review of existing matter, to BP in Western Australia, Service Printing Company Proprietary Limited, the Royal Society of Western Australia, the Department of Agriculture, the Western Australian Government Tourist Bureau and the Western Australian Government Railways Commission for the loan of blocks used in some of the illustrations, to Co-operative Bulk Handling Limited and the Department of Industrial Development for the use of photographs, and to the Government Printer and his staff for their continuing interest in the work and for assistance and advice freely given at all times.

The authors of the scientific articles appearing in Chapter II are especially thanked for contributions of new material and for their ready co-operation in revising the earlier text.

The reader's attention is drawn to the information service and library facilities available at this Office. Business men, manufacturers, primary producers, students and the public generally are invited to make full use of these services.

A list of corrigenda items appears immediately before Chapter I. Although great care has been taken to ensure the accuracy of the information in the Year Book, it is possible that it may nevertheless contain some errors and the reader is requested to indicate any apparent inaccuracies and also to suggest any improvements which may be thought desirable.

R. J. LITTLE,
Deputy Commonwealth Statistician
and
Government Statistician

Commonwealth Bureau of Census and Statistics
Western Australian Office
PERTH, W.A.
5th November, 1964

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GENERAL MAP OF WESTERN AUSTRALIA (preceding Index)

Including : **LOCAL GOVERNMENT AREAS**
STATISTICAL DIVISIONS
PRINCIPAL AIR ROUTES
ISOHYETS

INDEX (p. 445)

LIST OF STATISTICAL PUBLICATIONS (following Index)

CORRIGENDA

pages 17, 21, 27

Personal income data appearing under the heading *Private Finance* should read :—

Item	Year ended 30th June :—		
	1960	1961	1962
	£ million	£ million	£ million
Wages, salaries and supplements	204·0	219·6	230·3
Cash benefits from public authorities	28·6	31·7	34·0
Farm income	28·3	29·4	32·5
Income from dwelling rent	11·4	11·9	12·9
All other income	50·2	53·7	55·5
Total Personal Income	322·5	346·3	365·2
	£	£	£
Per head of mean population	450	475	490

page 100 (see also *Appendix*, pages 435–6)

Members of the Legislative Council

For " Hall, Hon. W. R. (A.L.P.) " read " Dellar, Hon. D. P. (A.L.P.) ".
For " Simpson, Hon. C. H. (C.P.) " read " Heitman, Hon. J. (L.C.L.) ".
For " Davies, Hon. E. M. (A.L.P.) " read " Dolan, Hon. J. (A.L.P.) ".

Summary at end of table :—

Country Party (C.P.)—For " 8 " read " 7 ".
Liberal and Country League (L.C.L.)—For " 9 " read " 10 ".

page 200

Commonwealth Taxation—Net Collections in Western Australia

The figures shown for 1960–61 and 1961–62 should be amended to read :—

	1960–61	1961–62
	£	£
Customs Duties	3,537,960	3,422,842
Excise Duties	16,877,705	17,811,950
Sales Tax	9,420,904	8,824,855
Total Collections (All Taxation)	71,006,312	76,524,719

page 345

Customs and Excise—Net Collections in Western Australia

The last three lines of the table should be amended to read :—

	£	£
Other Excise Duty	4,318,950	4,663,755
Total Net Excise Duties	16,877,705	17,811,950
Total Net Revenue (Customs and Excise)	20,415,665	21,234,792

CHAPTER I - HISTORICAL REVIEW

DISCOVERIES AND HISTORY UP TO COLONIZATION IN 1829

The first European known to have visited the western shores of the Australian continent, until then the legendary *Terra Australis Incognita*, was Dirk Hartogs, an officer of the Dutch East India Company. In October, 1616, while outward bound from Holland to the East Indies in the vessel " Eendracht," he entered the bay which Dampier later visited and named Shark Bay (*see map of Western Australia preceding Index*). Hartogs landed on part of its western arm, since named in his honour Dirk Hartogs Island. In July, 1618, the Dutch vessel " Mauritius " touched near North West Cape ; in 1619 Frederik de Houtman discovered the group of reefs and islands, now known as Houtman Abrolhos, lying some fifty miles off shore from the present port of Geraldton, and in 1622 the Dutch ship " Leeuwin " rounded the cape (now Cape Leeuwin) at the south-western extremity of the Australian continent. Early in 1627, Thyssen in the Dutch vessel " Gulden Zeepaard " made a close examination of the southern coastline for a distance of about a thousand miles eastward from Cape Leeuwin.

In 1629, the " Batavia " under the command of Francis Pelsart was wrecked on one of the Abrolhos islands while on a voyage from Holland to the Indies. The vessel was a total loss, but most of the passengers and crew reached shore. Pelsart, with eight men, made his way to Batavia in a ship's boat and obtained a frigate in which he returned to rescue the remaining castaways. In his absence some of the crew, led by the supercargo, Jerome Cornelis, had mutinied and murdered most of the passengers. Pelsart executed the ringleaders and marooned two lesser offenders on the nearby mainland.

In 1644, Abel Tasman, instructed by the Dutch East India Company, made a voyage of exploration in command of the yachts " Limmen," " Zeemeeuw " and " De Brak " in the course of which he examined the northern and north-western coasts as far south as Exmouth Gulf and probably landed at points now named Carnot Bay and Roebuck Bay. To the western part of the continent he gave the name " New Holland." In April, 1656, the Dutch ship " Vergulde Draeck," laden with merchandise and considerable treasure, was wrecked on a reef on the west coast about latitude 30° 40′ S. with the loss of 118 lives. Leaving 68 survivors on the mainland, a crew of seven set out for Batavia in a ship's boat. On their arrival an expedition was dispatched in search of the wreck and the castaways. This expedition and others sent later did not succeed in finding them but did, however, result in improved charts of parts of the Western Australian coast.

The first recorded visit by an Englishman was that of William Dampier in the small vessel " Cygnet." In January, 1688, the crew, after having mutinied and seized the ship, beached her for overhauling at a place on the north-west coast now known as Cygnet Bay.

In December, 1696, Commander Willem de Vlaming in the Dutch ship " Geelvinck," searching for a vessel overdue on a voyage from Holland to the Indies, came to an island which he named " Rottenest " (now spelt " Rottnest ") lying about ten miles from the mainland. In January, 1697, he and a party of armed men landed on the adjacent coast probably near the present Cottesloe and marching eastward a short distance came upon a river which he named the Swan River on account of the presence of many black swans. A few days later his ship and two accompanying vessels anchored close to the mouth of the river and Vlaming is said to have explored its course for some distance. He saw no natives though a primitive hut and other signs of habitation were found and some footprints were seen. Vlaming examined the coast northward as far as North West Cape. On the whole his report on the country was not favourable.

In 1699, Dampier was sent by William III in the " Roebuck " under an Admiralty Commission to make further explorations on the north-west coast. On the 1st August, 1699, he entered and named Shark Bay and then explored the coast as far north as Roebuck Bay. So disgusted was he with the barren and waterless country that he abandoned his mission. As a result of his adverse report, England appears to have lost interest in Australian exploration for many years.

Between 1705 and 1765 there were several visits by Dutch ships, two of which were wrecked on Houtman Abrolhos.

In March, 1772, a French ship " Le Gros Ventre " under the command of Captain de St. Alouarn anchored off Cape Leeuwin.

The next known visit was made by the British when, on the 26th September, 1791, Captain George Vancouver in H.M.S. " Discovery," attended by H.M.S. " Chatham " with Captain Broughton in command, reached the coast about 100 miles south-east of Cape Leeuwin, near Point Nuyts. Proceeding

eastward, the expedition entered a fine natural harbour which was named " King George III Sound," now King George Sound. Vancouver took formal possession, in the name of the King, of the land he saw between his landfall at Chatham Island and his point of departure from the coast near the present port of Esperance.

Another visit by the French followed, Admiral d'Entrecasteaux arriving near Chatham Island in December, 1792, at a point now named Point D'Entrecasteaux. His fleet, comprising the vessels " Recherche " and " Esperance," was in search of an expedition under La Perouse which had not been heard of since 1788 when it sailed from Botany Bay, New South Wales, on the eastern coast of the continent. The visit of the fleet under d'Entrecasteaux is commemorated in several place names along the southern coast.

In 1801–02, Captain Matthew Flinders under orders from the Admiralty made a detailed survey of the south coast in the sloop " Investigator." He charted the coast eastward from Cape Leeuwin, as far as Bass Strait. It was Flinders who suggested in 1814 that the continent be named Australia.

A scientific expedition, comprising the vessels " Geographe " commanded by Commodore Nicolas Baudin and " Naturaliste " by Captain Hamelin with Lieutenant Louis de Freycinet, was dispatched by the French Government from Le Havre in October, 1800. They reached the south-west coast in 1801. Becoming separated in a storm they made their way independently to Timor, the " Geographe " by way of Shark Bay and Cape Leveque, the " Naturaliste " calling at Rottnest and the Swan River, which was carefully explored to a point beyond the confluence of the Helena River. Leaving Timor in November, 1801, the two vessels sailed to Van Diemen's Land (now Tasmania). A small ship, the " Casuarina," was later chartered in Sydney and placed under de Freycinet's command. The " Geographe " and the " Casuarina " then proceeded to examine the southern coast of the continent and continued along the western coast, touching at points from King George Sound to what is now the West Kimberley area. A great number of well-known place names resulted from these voyages.

In 1818, de Freycinet, in command of the " Uranie," again visited the western and north-western coasts and made a geographical survey of Shark Bay.

From 1818 to 1822, Lieutenant Philip Parker King under instructions from the Admiralty made a survey of the whole of the coast between King George Sound and Cambridge Gulf.

In October, 1826, the French vessel " Astrolabe," under Captain D'Urville, visited King George Sound and spent almost a month there. In November of the same year, Governor Darling of New South Wales had dispatched Major Edmund Lockyer from Sydney with a detachment of soldiers and a party of convicts to found a settlement at King George Sound. The move was designed primarily to forestall the French who, it was feared, planned to annex the territory. A landing was made by Lockyer on the 25th December and the first settlement in what is now Western Australia was established.

In 1827, Captain Stirling sailed from Sydney in H.M.S. " Success " to examine the country in the vicinity of the Swan River, where a settlement was contemplated. His report was favourable and Governor Darling recommended the British Government to proceed at once with the venture.

On the 2nd May, 1829, Captain Charles H. Fremantle in H.M.S. " Challenger " arrived at the mouth of the Swan River and, hoisting the British flag on the south head, took formal possession in the name of His Majesty King George IV of " all that part of New Holland which is not included within the territory of New South Wales." Thus with this annexation, embracing an area extending to the 129°E. meridian, the whole of the Australian continent became British territory.

On the 1st June, 1829, Captain Stirling returned from England in the transport " Parmelia " in command of an expedition appointed to establish the Colony of Western Australia which for some time afterwards was generally known as the Swan River Settlement. He was joined a few days later by H.M.S. " Sulphur " with a detachment of the 63rd Regiment. At first the colonists camped on Garden Island but shortly afterwards established settlements at Fremantle and Perth.

CHRONOLOGICAL NOTES FROM 1829

1829—Landing at Swan River in May of Captain Fremantle from H.M.S. " Challenger," and formal possession taken of territory in the name of His Majesty King George IV. Arrival from Spithead in June of transport " Parmelia " having on board the newly-appointed Lieutenant-Governor, Captain James Stirling, and his family, together with intending settlers, numbering in all some 70 persons. " Parmelia " followed a few days later by H.M.S. " Sulphur " with detachment of troops. Proclamation of Colony on Garden Island on 18th June. Townsites of Perth, the capital of the Colony, and Fremantle, the port, laid out. Official ceremony on 12th August to mark the foundation of Perth. Arrival in

December of the " Gilmore " with Thomas Peel and settlers. In all, 18 merchant ships arrived during the year.

1830—Exploration of hinterland south and east of Swan River. Military station established at Port Leschenault, near present site of Bunbury. Townsite of Augusta laid out and colonists settled there. Town of Guildford surveyed ; townsite of Kelmscott proclaimed. Sites of towns of York and Beverley explored by Ensign R. Dale. Arrival of Rev. J. B. Wittenoom, first Colonial Chaplain. Postmasters appointed at Perth and Fremantle. First school and first hotels opened.

1831—Inauguration of monthly boat service between Fremantle and Guildford. Settlement of York district and exploration of lower Avon valley. First overland journey from Perth to King George Sound. Administration of settlement at King George Sound transferred to authorities at Perth. Townsite of Albany laid out. Arrival of Captain Stirling's commission as Governor and Commander-in-Chief and publication in December of Order of the King in Council constituting first Legislative Council. Production of first printed newspaper, " The Fremantle Observer," replacing earlier manuscript news-sheet. Wheat harvested from a total area of 160 acres. Vineyard established at Hamilton Hill. First meeting of Agricultural Society. Completion of Round House Gaol on Arthur's Head at Fremantle.

1832—In February, first sitting of Executive Council. First meeting of Legislative Council of five members comprising the Governor, Captain Stirling, the Commandant, Captain F. C. Irwin, the Colonial Secretary, Peter Broun, the Surveyor-General, J. S. Roe, and the Advocate-General, W. H. Mackie. Civil Court established. First sale of unoccupied Crown lands at auction, replacing earlier grants system. Further extension of settlement across Darling Range. In August, departure of Captain Stirling on visit to England.

1833—Journeys by Ensign Dale and Dr. Collie in vicinity of King George Sound. Examination of Vasse district by J. G. Bussell. Arrival of Sir Richard Spencer as Government Resident at Albany. First issue of "Perth Gazette." Rationing of food in the Colony ; situation relieved by arrival of several ships later in year and bountiful harvest at end of year. Area under crop 600 acres. Erection of flour mills at Perth.

1834—Captain Sir James Stirling returned to Perth in August and first regulations for Civil Establishment proclaimed shortly afterwards. In October, an encounter near Pinjarra between a party, led by Sir James Stirling and Captain Ellis, and the natives of the Murray tribe resulted in the death of about 15 natives ; Captain Ellis later died of a spear wound. Postal Department established. Agricultural Society held first agricultural show near Guildford. First export of wool, 7,585 lb., to England.

1835—Value of land and improvements estimated at nearly £250,000. Area of land under crop 1,800 acres. Livestock included 5,138 sheep and 646 cattle. Lack of interest in the Colony in London despite publication of Captain Irwin's " The State and Position of Western Australia." Estimates of receipts and expenditure for year laid before Legislative Council for the first time. Erection of Shenton's Mill at the Narrows on left bank of Swan River opposite Perth.

1836—First settlers took up residence in Bunbury district. Notable journeys east and north of Perth by J. S. Roe and G. F. Moore. Road between Perth and Albany surveyed by A. Hillman. Launching of first locally-built seagoing craft, the " Lady Stirling." First shipment of timber, " Western Australian mahogany " (jarrah), to England. First issue of " Government Gazette."

1837—Population 2,032 ; males 1,282, females 750. Sheep numbered over 10,000 and wheat production exceeded consumption. Bank of Western Australia commenced business. Perth Courthouse completed. Whaling operations begun in Cockburn Sound. Oil and whalebone valued at £3,000 exported.

1838—Captain George Grey explored country in vicinity of Prince Regent River while H.M.S. " Beagle " conducted coastal survey. Sir James Stirling left the Colony. First full plan of Perth issued by Surveyor-General. Rottnest Island first used as native prison.

1839—Grey's overland journey between Shark Bay and Perth. Government offered a reward of 2,560 acres of land for discovery of coal. Governor Hutt nominated four unofficial members to Legislative Council. Publication in London of Nathaniel Ogle's " The Colony of Western Australia " and in Perth of a vocabulary of the aboriginal language by George Grey.

1840—Construction of Perth causeway over Swan River begun. Departure of the " Shepherd " for London with cargo consisting wholly of colonial produce. Publication of " The Inquirer " newspaper. First full-time police constable appointed in Perth. First Master and Servant Act passed by Legislative Council.

1841—Population 2,760 ; males 1,706, females 1,054. Completion of coastal survey, begun in 1838, by Captains Wickham and Stokes in H.M.S. " Beagle." Edward John Eyre's journey overland from Fowler's Bay (South Australia) to Albany. Discovery by William Nairne Clark of hardwood forests between Albany and Point D'Entrecasteaux. Extension of mail services—weekly between Guildford and York and monthly between Guildford and Albany. Settlement established at Australind by the Western Australian Company following arrival of the " Parkfield " in March, this being the first substantial immigration since 1831. Absorption of Bank of Western Australia by Bank of Australasia, followed by the formation of a new locally-owned bank, the Western Australian Bank. Legislation providing for compulsory registration of births, deaths and marriages ; central registry office established at Perth.

1842—Number of sheep exceeded 60,000. Minimum price of Crown land raised to £1 per acre. Perth Town Trust constituted under Act of 1841. Opening of Wesleyan Church in Perth. Inauguration of scheme for immigration of boys from Parkhurst Prison, Isle of Wight. Net migration 673. Publication of first " Western Australian Almanack."

1843—Completion of Perth causeway. First bridge over Canning River opened. Pastoral industry adversely affected by fall in price of wool. News received of determination to wind up affairs of the Western Australian Company. Arrival in December of Very Rev. J. Brady to minister to the Roman Catholic community.

1844—Population 4,350 ; males 2,622, females 1,728. Sheep numbered 86,482 and cattle 5,376. Export of horses to India and of cattle to Mauritius. Sawmill and flour-mill, operated by steam, began production at Guildford. Regular exports of timber commenced. Lieutenant Helpman in the schooner " Champion " landed at the mouth of the Murchison River and reported good pastoral country. First execution of a European, for murder.

1845—First visit of a steam vessel, H.M.S. " Driver." First export of sandalwood. Departure of some settlers and closure of branch of Bank of Australasia. Petition by some settlers for introduction of convicts to relieve acute shortage of labour. First service held in Saint George's Church of England.

1846—Export of wool, 291,368 lb., more than double that of previous year. Formation of Western Australian Mining Company following reports of discovery of coal in Murray district. Discovery of coal at Irwin River by A. C., F. T. and C. Gregory. Launching at Fremantle of three vessels built of jarrah, the largest being of 260 tons cargo capacity. First Congregational Church opened in Perth. Foundation of New Norcia by the Benedictine missionaries Dom Serra and Dom Salvado.

1847—Membership of Legislative Council increased by appointment of the Collector of Revenue, H. C. Sutherland, as an official member. Appointment of General Board of Education and opening of Perth Boys' School and Perth Girls' School. First export of guano from Shark Bay. Birth of John Forrest at Bunbury.

1848—In October, first official census. Population 4,622 ; males 2,818, females 1,804. Livestock numbered 141,123 sheep, 10,919 cattle, 2,287 pigs and 2,095 horses. Area under crop more than 7,000 acres, including 3,317 acres of wheat. Discovery of lead by Gregory brothers in the Northampton district near Murchison River resulted in establishment of Geraldine Lead Mine. J. S. Roe's journey of 1,800 miles in the south-east as far as Russell Range ; reported discovery of coal at Fitzgerald River and of heavily-timbered areas. Twelve schools open with total enrolment of 400 scholars. Pastoral visit by Bishop Short from Adelaide.

1849—Following agitation by leading colonists for urgently-needed labour and public works, Order-in-Council published in October enabling British convicts to be transported to the Colony. Discovery of copper at Geraldine Mine. Publication of new regulations permitting the issue of pastoral leases.

1850—Arrival at Fremantle on 1st June of " Scindian " with first convicts, 75 in number, in the charge of Captain E. Y. W. Henderson, Comptroller-General of Convicts until 1863. The Australian Colonies Government Act precluded Western Australia from having " representative government " for the time being. Report by Lieutenant Helpman of discovery of pearls at Shark Bay. Survey of site of Geraldton.

1851—Programme of public works planned, to include roads, bridges and public buildings, using convict labour. Formation of Police Force. Swan River Mechanics' Institute founded.

1852—Construction of smelting furnace at Geraldine Mine. Establishment of coaling station at Albany and arrival of first mail steamer carrying mails between England and Australia. First export of colonial wine. Townsite of Dongara surveyed. Western Australian Turf Club established.

1853—Export of jarrah to Victoria. Ticket-of-leave depot established at Port Gregory, about 50 miles north of Geraldton, to aid mining industry.

1854—Second census of the Colony. Population 11,743 ; males 7,779, females 3,964. Livestock comprised 173,568 sheep, 20,436 cattle, 4,499 horses and 4,073 pigs. Area under crop approximated 14,000 acres, almost 6,000 acres being sown to wheat. Robert Austin's journey through the Murchison district ; Mount Magnet area described as having "every appearance of being one of the finest goldfields in the world." Erection at Quindalup, near Busselton, of first large timber mill. Issue of first postage stamps, introducing prepayment for mail delivery.

1855—Discovery of copper at Bowes River, about 25 miles north of Geraldton, leading to the development of the Northampton mineral field. Inauguration by steamer " Les Trois Amis " of first regular service by steamer on Swan River between Perth and Fremantle. First wing of Fremantle Gaol completed.

1856—Perth constituted a city and arrival of Archdeacon M. B. Hale as Bishop-Designate of Perth. Expedition, led by A. C. Gregory, from Victoria River (Northern Territory) along Sturt Creek as far as Gregory's Salt Sea, west of the Musgrave Range. Deficit in public accounts, causing Government to institute economies. Completion of new Perth Gaol and courthouse north of city.

1857—Reports of good pastoral country on Upper Murchison River following F. T. Gregory's exploration of the area. Negotiations completed for sale of large number of horses in India. Introduction of statutory control of "scab " in sheep. Regular river steamer service extended to reach Guildford.

1858—F. T. Gregory's exploration of the Gascoyne district and discovery of good pastoral lands. First meeting of Perth City Council. Elevation of Saint George's Church of England to Cathedral status with installation of Bishop Hale. Opening of Bishop Hale's School, the first secondary school in the Colony.

1859—Third census taken. Population 14,837 ; males 9,522, females 5,315. Livestock included 234,815 sheep, 30,990 cattle, 11,430 pigs and 8,386 horses. Area under crop 25,114 acres, of which wheat represented 13,610 acres. Reduction in price of Crown land from £1 to 10s. per acre. Further copper and lead mines opened up in Northampton district.

1860—A total of 5,500 convicts had arrived and many had been engaged on the construction of public buildings, bridges and roads, the remainder being employed privately. Great public interest in commercial photography, recently introduced in the Colony.

1861—Supreme Court established ; Mr. A. P. (later Sir Archibald) Burt appointed first Chief Justice. F. T. Gregory led an expedition in the North-West, in the course of which the Ashburton, Fortescue, De Grey and Oakover Rivers were discovered, the existence of good grazing lands reported and pearls found in the Nickol Bay area. Provision made for a volunteer defence force.

1862—Arrival of Dr. John Hampton, formerly Comptroller-General of Convicts in Tasmania, as sixth Governor of the Colony. Government offered a reward of £5,000 for discovery of payable goldfield within 150 miles of Perth. First regular export of pearl-shell. Severe floods in many parts of the Colony, causing much damage and the loss of several lives. Proclamation of special land regulations for the North and Eastern Districts. Foundation of Perth Benefit Building Investment and Loan Society. Money Order Office opened.

1863—First settlement in the North-West made by W. Padbury and J. Wellard in the De Grey district. Examination of Camden Harbour area near Collier Bay. H. M. Lefroy led an expedition to the Hampton Plains district east of the present site of Kalgoorlie. In January, E. H. Hargraves reported that the discovery of gold in the Colony was unlikely. Departure of last unit of British Regular Army. Governor Hampton took up residence in present Government House. Post Office Savings Bank opened at Perth.

1864—First shipment of wool from North-West pastoral areas. Formation of Camden Harbour Pastoral Association in Victoria and of Roebuck Bay Pastoral Association in Perth. Panter, Harding and Goldwyer killed by natives in the Roebuck Bay district. First of C. C. Hunt's expeditions, in this and the two following years, to the Hampton Plains district. City of Perth divided into three wards.

1865—Arrival at Camden Harbour of R. J. Sholl as Government Resident of the North District. Failure of Camden Harbour Pastoral Association and of the Denison Plains Pastoral Company to form permanent settlements. Captain E. A. Delisser's journey into the south-east corner of the Colony from South Australia and report of salt-bush country. Population of the Colony exceeded 20,000. Sheep numbered 445,000, cattle 45,000 and horses 16,000. Saint Mary's Roman Catholic Cathedral and Trinity Congregational Church opened in Perth.

1866—Town of Roebourne proclaimed and establishment there of headquarters of Government Resident and staff, transferred from Camden Harbour. Overland stock route from Geraldton to Nickol Bay opened by E. T. Hooley. Roebuck Bay Pastoral Association moved to Roebourne district. Pensioners' Barracks opened in Perth. Branch of National Bank of Australasia commenced business. Bridge over Swan River at Fremantle opened.

1867—Corner-stone of Perth Town Hall laid. Opening of new causeway over Swan River at Perth and of bridge over Helena River at Guildford. Legislative Council enlarged to comprise six officials and six colonists nominated by the Governor. Total area under pastoral leases in the North-West 5·8 million acres.

1868—On 10th January the last convicts sent to the Colony reached Fremantle on the "Hougoumont"; total arrivals since the beginning of transportation in 1850 numbered 9,668, all of whom were males. Increase in export of pearl-shell. Appearance of red rust in wheat crops in the Champion Bay district.

1869—Arrival of Sir Frederick Weld as seventh Governor of the Colony. Opening of first telegraph line, between Perth and Fremantle. John Forrest led an expedition, in search of Leichhardt's party, to a point east of Mount Margaret. Visit of H.R.H. the Duke of Edinburgh.

1870—Fourth official census taken. Population of Colony, 24,785 (15,375 males, 9,410 females) and of Perth, more than 5,000. Sheep numbered 654,054, cattle 47,263, horses 23,012 and pigs 16,120. Area under crop 50,263 acres, of which 25,963 acres sown to wheat. Inauguration of representative government; new Legislative Council comprised twelve elected members and six nominees. Severe drought affected both pastoral and agricultural districts. John and Alexander Forrest led an expedition from Perth to Adelaide (South Australia) by way of Kojonup, Esperance Bay and Eucla. Official opening of Perth Town Hall. Medical Board established for registration of medical practitioners. Government Printing Office opened. Opening of present Perth Wesley Church.

1871—First Loan Act passed authorizing, in addition to public works, a railway survey in the Champion Bay district and the purchase of the Perth-Fremantle telegraph line. Elementary Education Act vested control of education in a Central Board and in District Boards; annual government grants made to government and private schools. Municipalities of Perth, Fremantle, Guildford, Albany, Bunbury, Busselton, Geraldton and York proclaimed; Road Boards established. Opening by the Western Australian Timber Company of a private railway 12 miles in length near Busselton, using a steam locomotive.

1872—Cyclone in Nickol Bay area caused heavy stock losses and devastated the town of Roebourne. Flooding of the Avon and Swan Rivers caused extensive damage to property. Opening of telegraph line connecting Perth and Albany. Arrival of Lieutenant Archdeacon to conduct Admiralty surveys on the Western Australian coast.

1873—Major Warburton led a cross-country expedition from Alice Springs (Central Australia) to the De Grey River. Perth provided with street lighting, by means of oil lamps. Sheep numbered almost three-quarters of a million and cattle nearly 50,000.

1874—John and Alexander Forrest led a successful expedition from Geraldton to the overland telegraph line in Central Australia. Legislative Council increased to 21, of whom 14 were elected members. Work commenced on the Geraldton-Northampton railway. Export of timber, 4·1 million superficial feet valued at £24,192.

1875—Ernest Giles crossed the Colony from Port Augusta (South Australia) to Perth by way of Queen Victoria Springs. Work commenced on construction of overland telegraph line to Adelaide through Eucla. Introduction of Torrens system for land titles.

1876—Ernest Giles returned to South Australia by way of Rawlinson Ranges. Export of pearl-shell valued at £75,292. Six Fenian convicts escaped from Fremantle prison and were taken off by the American whaler "Catalpa." S.S. "Georgette" wrecked near Cape Leeuwin.

1877—Telegraph line between Perth and Eucla opened, thus establishing communication with Adelaide and London. First direct shipment of wool from the North-West to London. Visit of Baron Ferdinand von Mueller, the eminent botanist.

1878—Detailed survey of North-West pastoral districts completed. Bi-monthly steamship service inaugurated between Fremantle and Melbourne by James Lilly and Company. Branch of Union Bank opened in Perth.

1879—First government railway, 33 miles in length, opened between Geraldton and Northampton. Construction of Eastern Railway begun. Alexander Forrest explored the Kimberley district between Beagle Bay and the overland telegraph line crossing the Fitzroy and Ord Rivers. Secret ballot intro-

duced for Legislative Council elections. Saint George's Hall opened in Perth for public entertainments. The " Western Australian Times " (originally the " Perth Gazette ") became " The West Australian " newspaper.

1880—George Shenton elected first Mayor of Perth. Pastoralists took up areas in the Kimberley district. Cobb and Company's coaches introduced under government subsidy for inland mail and passenger services. First suit for divorce in the Colony.

1881—Fifth official census, the first taken simultaneously in all the Australian Colonies. Population 29,708 ; males 17,062, females 12,646. Livestock included 1,221,079 sheep, 64,603 cattle, 34,782 horses and 26,743 pigs. Area under crop 60,821 acres of which 29,352 acres under wheat. Opening of first section, 19 miles in length, of Eastern Railway connecting Fremantle, Perth and Guildford.

1882—Membership of Legislative Council raised to 24, including 16 elected members. First Presbyterian Church in the Colony opened in Perth. First issue of the " Daily News," the Colony's first daily newspaper. City of Perth Gas Company founded.

1883—Examination of Kimberley district by Surveyor-General, John Forrest, and Government Geologist, E. T. Hardman, who drew attention to the auriferous nature of the country. Proclamation of Broome, Derby and Carnarvon townsites. B. C. Wood elected first Mayor of Fremantle.

1884—Opening of second section of Eastern Railway between Guildford and Chidlows Well. Formation in London by Anthony Hordern of the Western Australian Land Company to construct and maintain a railway from Beverley to Albany on the land-grant principle. A branch of the Amalgamated Society of Carpenters and Joiners (England) formed at Fremantle. Population of the Colony, 32,958 ; males 18,623, females 14,335.

1885—First discovery of payable goldfield, in Kimberley district, by Hall and Slattery. Eastern Railway extended from Chidlows Well to York. Port of Derby proclaimed.

1886—Kimberley Goldfield and port of Wyndham proclaimed. Further extension of Eastern Railway to Beverley and Northam. Imperial convict establishment disbanded. Agreement reached with an English syndicate to construct and maintain a railway from Midland Junction to Walkaway on the land-grant principle. Legislative Council increased to 26, of whom 17 were elected members. Establishment of Aborigines' Protection Board.

1887—Discovery of gold near Southern Cross. Completion of railway between Geraldton and Walkaway. Telephone exchange system inaugurated at Perth. Pearling fleet off Eighty Mile Beach struck by cyclone causing loss of many lives. First Perth Cup run.

1888—Rich deposits of alluvial gold found in Pilbara district. Discovery of tin at Greenbushes. Opening of railway between Clackline and Toodyay.

1889—Passage by Legislative Council of Constitution Bill in anticipation of responsible government. Departure for London of delegation comprising Governor Broome, S. H. Parker, Q.C. and Sir Thomas Cockburn-Campbell to present the Colony's case to the Imperial Government. Discovery of alluvial gold in the Ashburton district. Completion by the Western Australian Land Company of the Great Southern Railway between Beverley and Albany, the contract for the construction of which had been given to Millar Bros. of Melbourne. Oversea telegraph communication established by submarine cable from Broome to Banjoewangi, Java. First efforts to prove existence of commercial coal at Collie River. Agreement signed between Perth Municipality and City of Perth Water Works Company for construction of the Victoria Reservoir in the Darling Range to connect with a service reservoir on Mount Eliza at Perth. Victoria Public Library (now State Library) opened.

1890—Responsible government granted to the Colony of Western Australia. Constitution proclaimed in the Colony on 21st October. Election of members of newly-constituted Legislative Assembly took place in November and December ; Governor nominated first members of the newly-constituted Legislative Council. Parliament officially opened on 30th December ; John Forrest commissioned to form first Ministry. Railway opened between Albany and Millar Bros.' timber concession near Denmark. Discovery of gold in the Murchison district. Perth Chamber of Commerce established.

1891—Sixth official census taken. Population 49,782 ; males 29,807, females 19,975. Sheep numbered 2,563,866, cattle 134,997, horses 48,999 and pigs 32,267. Elder Expedition, led by Lindsay and Wells, crossed the Colony from Warrina (South Australia) through Southern Cross to the Murchison district. Western Australia represented at the first National Australasian Convention, held at Sydney. Appointment of C. Y. O'Connor as the Colony's first Engineer-in-Chief. Railway between Bunbury and Boyanup opened.

1892—Rich goldfield discovered at Coolgardie by Bayley and Ford. Commencement of Fremantle Harbour works. Sir Malcolm Fraser appointed first Agent-General for Western Australia in the United Kingdom. Electric Lighting Act passed authorizing local government authorities to grant licences or make contracts for the supply of electricity for lighting and other purposes.

1893—Discovery of gold at Kalgoorlie in June by Hannan and O'Shea and in the Norseman district. Opening of South-Western Railway linking Perth, Bunbury and Donnybrook. Opening of telegraph line to Wyndham. Coolgardie townsite declared. Legislative Council became an elected body. Central Board of Education abolished and government schools placed under Ministerial supervision.

1894—Establishment of Bureau (later Department) of Agriculture and of Mines Department. Completion of Midland Railway Company's line, 277 miles in length, from Midland Junction to Walkaway. Eastern Railway extended from Northam to Southern Cross and line opened between Narngulu and Mullewa. Telegraph line to Kalgoorlie completed. Reported incursion of rabbits from South Australia.

1895—Opening of Agricultural Bank. South-Western Railway extended to Busselton. Municipality of Kalgoorlie proclaimed. First issue of " Kalgoorlie Miner " newspaper. Engineer-in-Chief instructed to draw up plan to supply water to Eastern Goldfields. Annual grants to churches and to private schools terminated by the Ecclesiastical Grant Abolition Act and the Assisted Schools Abolition Act. Board of Perth Public Hospital appointed.

1896—Eastern Goldfields Railway reached Coolgardie and Kalgoorlie. Great Southern Railway and Perth Water Works purchased by Government. Proclamation of Collie Coal Mining District. Peak of immigration stimulated by gold discoveries, net gain by migration being over 35,000 ; total population of Colony, 137,796 ; males 91,586, females 46,210. Calvert Exploration Expedition led by Wells from Lake Way to Fitzroy River. Carnegie's journey from Coolgardie to Halls Creek. Perth Observatory established. First cinematograph film shown in Perth. Cape Leeuwin lighthouse completed. Parliament authorized a loan to finance construction of a pipeline to convey water from Mundaring, near Perth, to Kalgoorlie. The Political Labour Party, the first political party in the Colony, formed at meeting of Trades and Labour Council.

1897—Delegates representing Western Australia took part in Federal Conventions held in Adelaide and Sydney. Inauguration by Education Department of evening continuation classes. Newly-constructed harbour at Fremantle opened to shipping. Commencement of Bunbury Harbour works. Opening of Perth City Markets. Completion of first wing of new building to house the Western Australian Museum. First issue of " Sunday Times " newspaper. Carnegie expedition returned from Halls Creek. Church of Christ opened in Perth. First service in the Perth Synagogue. Establishment of Statistical Branch under direction of the Registrar-General.

1898—Australasian Federal Convention held in Melbourne. Extension of Northern Railway from Mullewa to Cue and of South-Western Railway to Collie and to Bridgetown. Work commenced on Goldfields Water Scheme. First butter factory established, at Busselton. Consolidating Land Act offered Crown land to settlers on liberal terms. Department of Agriculture succeeded the Bureau of Agriculture. Branch of the British Medical Association formed in Perth. First motor car in the Colony. Zoological Gardens opened at South Perth.

1899—Inauguration of tramway service by the Perth Electric Tramway Company. Railway opened between Kalgoorlie and Menzies. Discovery of tin in Pilbara district. Departure of first contingent of volunteers to serve with Imperial Forces in the Boer War. Fees abolished at government schools. Branch of Royal Mint opened in Perth. Chamber of Manufactures formed. Perth Baptist Church opened. Legislative Council enlarged to 30 members and Legislative Assembly to 50 members ; women granted right to vote at parliamentary elections.

1900—Large majority in favour of Federation at referendum held on 31st July ; For—44,800, Against—19,691. Perth Technical School opened. British mail-steamer contracts specified Fremantle in place of Albany as the first Australian port of call. Introduction of triennial Parliaments and payment of members. Industrial Conciliation and Arbitration Act passed : trade unions legalized. Government Refrigerating Works opened in Perth.

1901—Inauguration of Commonwealth of Australia on 1st January. Visit of T.R.H. the Duke and Duchess of Cornwall and York. Sir John Forrest entered Federal Parliament after completing 10 years in office as Premier of Western Australia. Labour Party won eight seats at the Legislative Assembly elections. Seventh census of Western Australia, the first taken simultaneously in all States on a uniform national basis. Population 184,124 ; males 112,875, females 71,249. Appointment of

members of first Court of Arbitration. Completion of submarine cable connecting Perth with South Africa. First meeting of the Chamber of Mines of Western Australia.

1902—Opening of railway from Northam to Goomalling. Work commenced on rabbit-proof fence to protect southern agricultural areas. Tramway service inaugurated by Kalgoorlie Electric Tramways Limited. Opening of Teachers' Training College. Establishment of Fremantle Harbour Trust. Death of C. Y. O'Connor, Engineer-in-Chief.

1903—Completion of Goldfields Water Scheme supplying water to Coolgardie and Kalgoorlie by a 346-mile pipeline from Mundaring Weir in the Darling Range near Perth. Peak year of gold production ; 2,064,801 fine ounces. Extension of Eastern Goldfields Railway from Menzies to Leonora. Work begun on second rabbit-proof fence.

1904—First Labour Ministry, led by Henry Daglish. School of Mines opened at Kalgoorlie. An Endowment Act provided for the appointment of trustees to administer funds for the establishment of a University. Royal Commission appointed to consider the need to encourage immigration and the possibility of establishing a large-scale wheat-growing industry.

1905—First quarter million of population attained. Completion of No. 2 Rabbit-Proof Fence, 724 miles in length, from Point Ann on south coast through Cunderdin and Warra Warra to Gum Creek in East Murchison district. Transfer of Royal Agricultural Society's show to present site at Claremont. Tramway service inaugurated by Fremantle Municipal Tramways and Electric Lighting Board. Transfer of government railway workshops from Fremantle to Midland Junction completed.

1906—Government railway construction accelerated so as to penetrate the new wheat-growing areas ; total mileage of railways open for traffic doubled in succeeding 10 years. Capital of Agricultural Bank greatly increased. Title of Post Office Savings Bank changed to " Government Savings Bank."

1907—Beginning of continuous export of wheat. A. W. Canning surveyed stock route from Wiluna in the East Murchison to Halls Creek in the Kimberley district. Completion of No. 1 Rabbit-Proof Fence, 1,139 miles long, from Starvation Harbour on the south coast through Burracoppin and Gum Creek to the north-west coast, near Condon, and of No. 3 Fence (160 miles) between Warra Warra and a point on the west coast a few miles south of the mouth of the Murchison River. State income taxation levied for the first time. Commonwealth Court of Conciliation and Arbitration declared first basic wage.

1908—Opening of Art Gallery extension to the Western Australian Museum.

1909—Great advance in wheat acreage ; harvest reached 5·6 million bushels. Completion of survey of transcontinental railway route from Kalgoorlie across the Nullarbor Plain to Port Augusta (South Australia). Railways opened from Hopetoun to Ravensthorpe and from Coolgardie to Norseman. Commonwealth Government commenced to pay old-age pensions. Children's Hospital opened at Perth. Swan River Mechanics' Institute became the Perth Literary Institute.

1910—Continued decline in gold production ; quantity won fell below 1·5 million fine ounces for the first time since 1900. Commonwealth Government made provision under the Surplus Revenue Act for payment to Western Australia of a special annual grant for a period of 10 years. Commonwealth Government commenced to pay invalid pensions. Appointment of Royal Commission to inquire into establishment of a University. First issue of Commonwealth bank notes. Manufacture of superphosphate fertilizers commenced. Formation of Western Australian Trotting Association.

1911—First federal census of the Commonwealth—Western Australia's population 282,114 ; males 161,565, females 120,549. In October the Labour Party led by John Scaddan obtained an overwhelming majority at the Legislative Assembly general elections. Widespread drought in new wheat-growing districts. Revival of lead mining at Northampton. Act of Parliament establishing University of Western Australia. Opening of Perth Modern School. Imperial penny postage inaugurated throughout British Empire.

1912—Disappearance of S.S. " Koombana " with all hands in cyclone off north-west coast. Completion of railway from Port Hedland to Marble Bar. Construction of transcontinental railway commenced. Commonwealth Government paid maternity allowances for the first time. Establishment of State Shipping Service, State Brickworks and State Ferries. Workers' Homes Act providing for government advances to workers for erection or purchase of homes.

1913—First students enrolled at University in temporary quarters at Perth. Branches of the Commonwealth Bank and Commonwealth Savings Bank opened. Establishment of State Saw Mills. Government assumed control of Perth tramway system after purchase from a private company. Marine wireless station opened at Applecross. Public Library transferred to new building adjacent to Museum. Criminal Code adopted by Parliament.

1914—Outbreak of European War, 4th August ; embarkation of first Western Australian volunteers. Commonwealth Government made provision for payment of war pensions to members of the forces and their dependants. Widespread drought conditions resulted in failure of wheat crop ; harvest declined from 13·3 million bushels in previous year to 2·6 million bushels. Legislation to establish an Industries Assistance Board to provide credit and seed wheat for farmers. Establishment of Narrogin Farm School. Strike in building trades. Formation of the Country Party. Opening in Perth of first free kindergarten.

1915—Western Australian volunteers took part in landing at Gallipoli, 25th April. Completion of rail link between Northam and Mullewa. Successful development of the Nabawa wheat strain, a leading strong wheat variety. Commonwealth income taxation imposed for the first time.

1916—Recovery of the wheat industry. Western Australia one of three States in favour of conscription at unsuccessful Commonwealth referendum held in October. Opening of King Edward Memorial Hospital for Women. Reduction of hotel trading hours to 9 a.m.—9 p.m.

1917—Opening of transcontinental railway, 1,051 miles in length, connecting Kalgoorlie with Port Augusta (South Australia), 454 miles being in Western Australia. Substantial increase in wool production from 33·1 million lb. to 40·3 million lb. In December, conscription proposals again rejected at Commonwealth referendum ; Western Australia again favourable. Strike of waterside workers at Fremantle.

1918—War in Europe ended, 11th November. Plans made for the rehabilitation of returned soldiers. Forests Act provided for permanent dedication of State Forests and established a Forests Department with power to control cutting of timber and to undertake reforestation. Inauguration by Education Department of correspondence tuition for children in remote areas. Death of John Forrest shortly after elevation to the British peerage.

1919—Creation of Discharged Soldiers' Land Settlement Board. Serious outbreak of pneumonic influenza caused 540 deaths. Wyndham Meat Works commenced operations. Waterfront strike at Fremantle. First modern aeroplane flown in the State, by Norman Brearley. Motor cars numbered 3,000. Legislation passed to provide for control of road traffic and licensing of vehicles. James Mitchell appointed Premier.

1920—Commencement of large-scale assisted migration in association with further settlement of the wheat belt. In December, wool auctions held in Perth for the first time. State Civil Service strike, terminated by creation of Appeal Board. Commonwealth Taxation Department undertook collection on behalf of the State Government of its income tax and land tax. Visit of H.R.H. the Prince of Wales.

1921—Second Commonwealth census. Western Australian population 332,732 ; males 177,278, females 155,454. Further development of soldier settlement. Inauguration of Group Settlement Scheme in South-West to expand the dairying industry, in association with assisted immigration from the United Kingdom. Election to Legislative Assembly of Australia's first woman Member of Parliament, Mrs. Edith Cowan. Establishment by W.A. Airways Ltd. of first air mail service in Australia, between Geraldton and Derby.

1922—Empire Settlement Act of the Imperial Parliament inaugurated an immigration scheme financed jointly by British, Federal and State Governments. Formation of growers' voluntary wheat pool, following termination of State pool. Observation of solar eclipse by international party of astronomers at Wallal on north-west coast.

1923—Wheat harvest increased from 13·9 to 18·9 million bushels. Arrival during the year of 7,654 assisted immigrants. Present General Post Office in Forrest Place opened.

1924—Further increase in wheat harvest, to 23·9 million bushels. Continued decline in gold-mining activity ; production less than one-half million ounces. Considerable progress in clearing of group settlement blocks. Assisted immigrants numbered 6,715, bringing the total during the five years 1920–1924 to 23,622. First radio broadcasting station 6WF (Westralian Farmers) opened at Perth. Interstate shipping strike. At Marble Bar, period of 160 consecutive days with maximum temperature of 100°F or higher ended 7th April. Labour Government assumed office under Philip Collier.

1925—Appointment by Commonwealth Government of Royal Commission to inquire into financial disabilities of Western Australia under federation. Compulsory voting introduced for federal elections. Industrial Arbitration Act provided for appointment of first permanent President of Court. Introduction of compulsory insurance of employees under Workers' Compensation Act. South-Western Railway extended to Flinders Bay. Disruption of shipping services caused by strike of waterside workers, Australian seamen and British seamen in Australian waters. Opening of woollen mill at Albany.

1926—Commonwealth Development and Migration Commission established. Main Roads Board constituted ; road construction scheme, with Commonwealth financial assistance, commenced. Declaration of first State basic wage, adult weekly rate of £4 5s. for males and £2 5s. 11d. for females. State Government first undertook workers' compensation insurance business. Unusually heavy winter rains, resulting in flooding of parts of metropolitan area and partial destruction of railway bridge at North Fremantle. Opening of Muresk Agricultural College. Congress of the Australian and New Zealand Association for the Advancement of Science held in Perth for the first time. Introduction of the " Paterson Plan," a voluntary scheme designed to stabilize the price of butter. Metropolitan Market Trust established.

1927—Wheat harvest 36·4 million bushels, the highest in the Commonwealth. Amalgamation of Western Australian Bank with Bank of New South Wales. Completion of rail link between Kalgoorlie and Esperance. Timber exports 157·4 million superficial feet, the greatest since 1913. Large increase in output of butter from factories in the South-West. Introduction of bulk handling of fuel oil at the Port of Fremantle. Visit of T.R.H. the Duke and Duchess of York.

1928—Peak of post-war immigration; net gain from migration 9,660. Constitution Alteration (State Debts) Referendum ratified the Financial Agreement between Commonwealth and States. Tractors on farms at end of year numbered 4,000.

1929—Celebration of Western Australia's centenary. City of Perth declared a Lord Mayoralty and Fremantle given city status. Wheat harvest, 39·1 million bushels, again the highest in Australia. Gold production amounted to only 377,176 fine ounces, the lowest level in a continuous decline since 1903. Inauguration of regular interstate air service, by W.A. Airways Ltd., between Perth and Adelaide (South Australia). End of large-scale railway construction in the wheat-growing areas. Last year of substantial intake of assisted immigrants since the War ; in all, 43,693 had arrived in the ten-year period 1920–1929. First " talkie " films shown in Perth.

1930—Onset of world economic recession and marked fall in wheat and wool prices. Rapid growth in unemployment. Some improvement in gold-mining industry. Wheat harvest, 53·5 million bushels, the largest up to that time. Extension of northern air mail route to Wyndham. Establishment of interstate telephone trunk line between Perth and Adelaide. Defeat of Labour Government at elections in April ; Nationalist-Country Party Government assumed office with Sir James Mitchell as Premier.

1931—Further deterioration in economic conditions. The Premiers' Plan proposed a reduction of adjustable government spending by 20 per cent. and interest rates by 22½ per cent. ; proposals subsequently ratified by State Parliament. Depreciation of Australian currency ; in terms of sterling, exchange rate fixed at £A125 = £100 stg. Substantial increase in price of gold. Wheat and wool prices at lowest level ; average f.o.b. values for 1930–31 export year, wheat 2s. 3½d. per bushel, wool 8·04 pence per lb. Transfer of State Savings Bank to Commonwealth Bank. First quarterly adjustment made to State basic wage. Wiluna gold mines in production. Discovery at Larkinville of Golden Eagle nugget (1,135 ounces), the largest found in Western Australia. Systematic drainage and irrigation scheme inaugurated in the Harvey and Waroona districts ; relief work provided for the unemployed. Introduction of bulk handling of wheat.

1932—Continued increase in unemployment, 30 per cent. of trade union members being reported as unemployed ; many families entirely dependent on government relief. A tax of 4½d. in the £ on all income imposed by a Financial Emergency Act. Extension of Northern Railway to Wiluna. Transfer of University to its permanent site at Crawley. Appointment of Commission to control private lotteries and to conduct State lotteries to benefit hospitals and charities. Metropolitan Whole Milk Act provided for establishment of a Board to regulate purchase and distribution of whole milk in the metropolitan area.

1933—Third Commonwealth census. Western Australian population 438,852 ; males 233,937, females 204,915. State basic wage at lowest level, £3 8s. for males in metropolitan area, since Arbitration Court's original declaration in 1926. Some reduction in unemployment although still at high level of 25 per cent. of trade union membership. Levy by Federal Government of a tax on flour at £4 5s. per ton to assist the wheat industry, depressed by consistently low market prices. Commencement of work on Canning Dam, to have ultimate capacity of over 20,550 million gallons, as source of water supply for metropolitan area. Official opening of Wellington Dam, on Collie River, with capacity of 8,000 million gallons, to serve the Collie River Irrigation District. South-Western Railway extended to Northcliffe. Establishment of banana plantations at Carnarvon. A compulsory referendum resulted in two-to-one majority in favour of the State's secession from the Commonwealth. Appointment of Commonwealth

Grants Commission to inquire into needs of States claiming financial assistance. Labour Government, under Philip Collier, took office in April following defeat of Nationalist-Country Party Government. Sir James Mitchell, formerly Premier, appointed Lieutenant-Governor to administer the State. Introduction of trolley-bus services in Perth and suburbs. Formation in Perth of first Australian Junior Chamber of Commerce.

1934—Wool production 90 million lb.; rise in wool prices. Fall in butterfat prices and surviving group settlement dairy holdings in difficult circumstances. The voluntary " Paterson Plan " superseded by a compulsory price equalization scheme for stabilization of butter prices. Inauguration of air mail service between Australia and England. Racial riots in Kalgoorlie and Boulder. Township of Onslow devastated by cyclone. Visit of H.R.H. the Duke of Gloucester.

1935—State Civil Service salaries restored to pre-depression level. Continued decrease in unemployment, to 13·4 per cent. of trade union membership. Drought in pastoral areas and north-eastern agricultural district resulted in heavy losses of stock and crops. Rejection by the Imperial Parliament of State's secession petition. Establishment of flying doctor service in the North-West and Kimberley Divisions with bases at Port Hedland and Wyndham. Pearling fleet overwhelmed at Lacepede Islands by a cyclone, causing loss of 20 luggers and 142 lives.

1936—Drought conditions caused further heavy losses of stock in pastoral areas and reduced wheat harvest to 21·5 million bushels, the lowest for ten years. Increase in gold production; many oversea mining companies floated to develop Western Australian low-grade gold-ore deposits. Commonwealth Government commenced to pay service pensions to certain former members of the armed services and their dependants. Flying time between Perth and Adelaide reduced to one day. Retirement of Philip Collier from the Premiership after a total of nine years in office served in two terms.

1937—Improved seasonal conditions resulted in greatly increased wheat harvest; more attention given to mixed farming in wheat areas. Under stimulus of rising prices, gold production exceeded one million fine ounces for the first time since 1916. Flying doctor base established at Kalgoorlie.

1938—Substantial improvement in pastoral conditions; increase in export of fat lamb carcasses. Federal embargo on oversea export of iron ore from Yampi Sound. State basic wage increased by 5s. 1d. to £4 per week for males in the metropolitan area, following presentation of special evidence at Arbitration Court's annual inquiry. Institute of Agriculture established at University as centre of agricultural and pastoral research. Legislation authorized the establishment of the State Government Insurance Office and validated its transactions since 1926.

1939—Outbreak of war in Europe, 3rd September; recruiting begun for the second A.I.F. and the Empire Air Training Scheme. Acquisition by British Government of entire woolclip at guaranteed price of 13·4375 pence per lb. Gold production 1,214,238 fine ounces, the highest since 1915. National Register of Manpower and Wealth Census undertaken by Commonwealth Government. Legislation passed to amalgamate Financial Emergency Tax and income tax. Passage of other State Acts to control prices, rents and patriotic funds. Completion of new traffic bridge over Swan River at Fremantle. Cyclonic disturbance at Port Hedland; severe storm damage at Kalgoorlie and interruption of goldfields rail services.

1940—Severe drought over greater part of the State. Order issued under National Security Regulations for acquisition by Commonwealth Government of apple and pear crop and Board established for this purpose. First commercial flax crops. Sum of £115,000 allocated by Commonwealth Government from funds raised under the Wheat Industry Act of 1938, as first contribution under four-year plan for reconstruction of marginal areas. Liquid fuel rationed. Presentation of report of Royal Commission on the Pastoral Industry in the Leasehold Areas in Western Australia. Official opening of Canning Dam. Commencement of collection of income tax on wages and salaries at source. Civil Defence (Emergency Powers) Act passed empowering State Government to make regulations for protection of civilian population.

1941—Wheat growers licensed under wheat stabilization scheme for control of production. Port Hedland and Marble Bar struck by cyclone; extensive damage to pastoral property. Torrential rains resulting in floods, with consequent losses of stock, in pastoral areas near De Grey River. Inauguration of Commonwealth scheme of child endowment, covering children under 16 years of age other than the first, or only, child of a family; pay-roll tax on employers introduced. Samson Brook irrigation dam near Waroona (capacity 1,800 million gallons) opened. Plans announced for government survey of the Ord River area to examine irrigation possibilities. Work commenced on interstate road, the Eyre Highway, linking Norseman and Port Augusta (South Australia). Increase in industrial activity,

particularly in manufactures for war purposes—engineering, clothing and food processing. In December, Australia at war with Japan following Japanese attack on American naval base at Pearl Harbour, Hawaii.

1942—Area sown to wheat restricted under a Commonwealth wheat stabilization scheme; but area actually cropped, 1·75 million acres, significantly below maximum permissible area. Contraction of gold-mining industry included among measures taken by Commonwealth to secure release of manpower for essential services. Growing threat to Australia following Japanese invasion of Malaya and Netherlands East Indies; creation of special State Ministry of Civil Defence. Civilian registration of all persons aged 16 years and over. Munition factory at Welshpool commenced production. Rationing of clothing, tea and sugar. Introduction of daylight-saving scheme. Attacks by Japanese aircraft on Broome, Wyndham and Port Hedland. Floods in areas adjacent to Gascoyne River. Station properties in Port Hedland and Marble Bar district, and railway linking these towns, damaged by cyclone. Luggers wrecked with loss of life at Port Hedland. Introduction of Uniform Tax Scheme, the Commonwealth Government becoming sole taxing authority in income tax field, the State Treasuries being reimbursed by the Commonwealth. Widows' pensions paid for the first time. Establishment of State Public Trust Office under Public Trustee Act of 1941. Basic wage increased by 4s. 6d. to £4 14s. 11d. by the Premier, in exercise of powers conferred by National Security (Economic Organization) Regulations.

1943—Wool production, 105·2 million lb., the highest recorded up to that time. Severe decline in gold-mining industry; production, 546,475 fine ounces, 36 per cent. less than in previous year. First production of blue asbestos at Wittenoom Gorge in the West Pilbara district. Japanese air raid on Exmouth Gulf, the most southerly point of aerial attack. Western Australia exempted from Commonwealth scheme of daylight saving. Rationing of butter introduced. Enactment of State legislation to provide for raising of school-leaving age to 15 years. First payment by Commonwealth Government of funeral benefits for age and invalid pensioners. State legislation established a pensions fund for coal miners and their dependants. Workers' Homes Board empowered to provide houses for letting purposes and to advance money to householders for improvement of sub-standard dwellings.

1944—Drought conditions in pastoral areas and subnormal rainfall in agricultural and dairying districts. Wheat production, 15·9 million bushels, the lowest since 1922. Introduction of meat rationing. Inauguration of compulsory third party (motor vehicle) insurance. Introduction of " pay-as-you-earn " system of collection of income tax on incomes of individuals. Legislation passed establishing the Agricultural Bank as a trading bank, to be known as the Rural and Industries Bank. Defeat of Commonwealth referendum seeking extension of Commonwealth powers; Western Australia one of two States in favour. Strike of waterside workers against introduction of roster system.

1945—End of war in Europe, 9th May (VE Day) and in the Pacific, 15th August (VP Day); general demobilization of fighting forces begun. Ratification by State Parliament of Commonwealth-State agreements on war service land settlement and on housing. Plans to re-establish civilian building industry to overcome acute housing shortage. Legislation passed providing for State control of building permits and materials. Restrictions on use of electricity in metropolitan area as a result of coal shortage. State Electricity Commission established for purpose of extending and co-ordinating electricity supply. Occupation survey of population taken by Commonwealth Statistician. Introduction of Commonwealth scheme for payment of unemployment and sickness benefits. Development of Yampi Sound iron-ore deposits proceeding. Loss of lives, stock and property in cyclone on north-west coast. Flood damage at Carnarvon. In June, 23 consecutive days of rain at Perth resulting in a fall of 18·75 inches, the highest ever recorded there in any one month; total Perth rainfall for year, 52·67 inches, also a record. Death of Rt. Hon. John Curtin, Australian Prime Minister and M.H.R. for Fremantle, the first Western Australian Member to lead a Commonwealth Government.

1946—New industrial centre established at former munition factory at Welshpool and plans announced for manufacture of agricultural tractors. Re-establishment of gold-mining industry in process. Wheat acreage restrictions no longer operative; area about 30 per cent. greater than that of previous season. Perth wool auctions resumed, following termination of appraisement scheme. The Milk Act established the Milk Board of Western Australia with State-wide powers to regulate the production, sale and distribution of milk. Application by State Government for Commonwealth financial assistance in development of water supplies to agricultural areas and towns. Interruptions of electricity supply due to suspension of coal production at Collie caused by strike of railway workers. Resumption of pearling industry at Broome. Interim basic wage adjustment by Commonwealth Arbitration Court, increasing federal weekly basic wage rate in Western Australia by 7s. All States in favour at referendum

to authorize Commonwealth Government to legislate with respect to social services. Hospital benefits scheme introduced by Commonwealth Government.

1947—Fourth Commonwealth census. Western Australian population 502,480; males 258,076, females 244,404. Continued expansion in factory activity. Building operations increased, with more labour and materials available. Establishment of State Housing Commission replacing Workers' Homes Board. Arrival of first British migrants under the Free and Assisted Passage Agreement between the Commonwealth and United Kingdom Governments; first arrivals of displaced persons following Commonwealth Agreement with International Refugee Organization. Stimulation in mining generally; gold production, 703,886 fine ounces, the highest since 1942. World shortage of lead and high prices resulted in reopening of lead mines in Northampton area; a deposit inland from Derby also producing high-grade ore. Expansion in fishing industry; first oversea exports of crayfish tails. Interim increase of 5s. in State basic wage. Granting by Arbitration Court of 40-hour week in industry to operate from 1st January, 1948. Legislation included the Agricultural Areas, Great Southern Towns, and Goldfields Water Supply Act to approve and give effect to a scheme, the " Comprehensive Water Supply Scheme," for reticulating water to certain mixed-farming areas, for towns, stock and domestic purposes, to towns along the Great Southern Railway, and for increasing the supply to the Eastern Goldfields.

1948—Average f.o.b. value of wheat for 1947–48 export year, 17s. 6d. per bushel, the highest ever recorded. Federal aid to maintain production of " marginal " gold mines. Integrated wood-distillation and charcoal-iron industry in production at Wundowie in Darling Range near Perth; first output of pig-iron. Commonwealth Parliament passed the Western Australia Grant (Water Supply) Act approving payment to the State of an amount of £2·15 million, being half the estimated cost of the Comprehensive Water Supply Scheme. Completion of Stirling Irrigation Dam, on Harvey River, with capacity 12,000 million gallons. Serious outbreak of poliomyelitis; 311 cases reported. Inauguration of Commonwealth Rehabilitation Service providing treatment and vocational training of disabled persons. Abolition of rationing of meat and clothing. Redistribution of seats for Legislative Assembly. Publication of boundaries of three new Federal electorates—Curtin, Canning and Moore. Legislation included the Prices Control Act, a measure necessitated by the Commonwealth Government's vacating of the prices control field, and the Wheat Industry Stabilisation Act authorizing operation in Western Australia of the Commonwealth Wheat Stabilization Plan.

1949—Whaling resumed after a lapse of over twenty years. Substantial increase in crayfish production; total catch exceeded 5 million lb., more than 80 per cent. greater than in previous year. Commencement of operations of Air Beef Pty. Ltd. at Glenroy Station in the Kimberley; beef carcasses transported by air to Wyndham for shipment overseas. In September, rise in gold price from £10 15s. 3d. to £15 9s. 10d. per fine ounce, following the British Government's devaluation of sterling. First agricultural tractors produced in the State. Rejection by Privy Council of Federal Government's appeal against the High Court's ruling that the Government's proposals for nationalization of banking were invalid. High Court declared invalid the Commonwealth Government's rationing of petrol; as a result the States invited to assume authority. The necessary enabling legislation, the Liquid Fuel (Emergency Provisions) Act, was the major measure brought before the State Parliament in a short session concluding early to allow members to contest seats at the federal election in December or to participate in the election campaign. Defeat of the Chifley Labour Government; Rt. Hon. R. G. Menzies became Prime Minister as leader of a Liberal-Country Party coalition. Western Australia's representation in enlarged Federal Parliament increased from five to eight in the House of Representatives and from six to ten in the Senate.

1950—Population increase 28,465 (net gain by migration 19,295 and by natural increase 9,170) the greatest since 1896, the peak year of the " gold rush " period. By an amendment to the Industrial Arbitration Act, the Court empowered in fixing the basic wage to have regard for economic capacity of industry as well as workers' " needs "; in exercise of this power, Court declared an increase of 20s. in the basic rate for males and 15s. for females. Abolition of rationing of petrol, tea and butter and lifting of ban on sale of fresh cream. Federal Government extended child endowment to include the first, or only, child of a family at the rate of 5s. per week. Introduction of pharmaceutical benefits scheme financed by the Commonwealth. Prohibition poll, the first since 1925, conducted under provisions of Licensing Act; proposals rejected by overwhelming majority. Legislation passed to increase membership of State Cabinet from eight to ten.

1951—Average f.o.b. value of wool for 1950–51 export year, 143·43 pence per lb., the highest ever recorded. First shipment of oats and barley in bulk successfully handled. Experimental injections of myxomatosis in rabbits conducted by Department of Agriculture. Shipment to New South Wales of

first load of iron ore mined at Cockatoo Island, Yampi Sound. Port Hedland-Marble Bar railway closed. Mining activity caused revival of goldfields town of Bullfinch. First section of new power house at South Fremantle began operating. South-West Power Scheme inaugurated with opening of new power station at Collie. Completion of raising of wall of Mundaring Weir to augment storage for northern section of Comprehensive Water Supply Scheme ; capacity increased from 4,655 to 15,154 million gallons. Free Milk Scheme for school children commenced, with financial aid from Commonwealth Government. Total increase during the year of £1 19s. 2d. in State basic wage for males in metropolitan area, the largest rise during any year since inception in 1926. Female basic wage increased on 1st December to 65 per cent. of male rates. Act passed to establish a Library Board to foster the activities of free libraries and to improve library services.

1952—Crude birth rate, 25·66 per thousand of mean population, the highest since 1917. Negotiations completed for establishment at Kwinana, on the coast ten miles south of Fremantle, of oil-refining, steel-rolling, and cement-manufacturing projects with provisions for port facilities in Cockburn Sound and rail links with metropolitan system. Perth Airport raised to international status ; inauguration of air communication between Perth and Johannesburg and between Perth and Singapore. New causeway over Swan River at Perth opened. Six months' strike of metal trades workers, claiming increased wage margins, resulted in widespread unemployment and suspension of metropolitan rail services for a period of three months and considerable reduction in country services. Removal of price control on clothing and textiles. Death of His Majesty King George VI and accession of Her Majesty Queen Elizabeth II.

1953—Discovery of oil at Exmouth Gulf drill-site announced in December. Encouraging results from rice-growing experiments at Fitzroy and Ord Rivers. Construction of oil refinery at Kwinana begun and work started on jetty to serve a steel-rolling mill in the same area. Introduction by Commonwealth of medical benefits to subsidize cost of treatment of members of approved medical insurance organizations and their dependants. Recontrol of prices of some items of essential clothing and soft goods in May ; abolition of all prices control in December following Parliament's rejection of the Prices Control Act Amendment Continuance Bill. State control of building operations and building materials supply lapsed with the expiration of the Building Operations and Building Materials Control Act. State Entertainments Tax imposed in October following withdrawal of Commonwealth Government from this field.

1954—Fifth Commonwealth census. State population 639,771 persons (males 330,358, females 309,413) of whom 348,647 were enumerated in the metropolitan area. Reclamation work begun for the bridge-heads and road approaches for a bridge over the Swan River at the Narrows. Introduction of diesel-electric locomotives on State railways in May, supplementing diesel rail cars already operating. Coal output exceeded one million tons for the first time. Exploratory oil drilling continued in vicinity of Exmouth Gulf and commenced in Fitzroy section of Canning Basin. Further permits granted for exploration in areas in north and south of the State covering about 233,000 square miles. Serious outbreak of poliomyelitis ; 436 cases reported. Opening at York of first public library established by the Library Board in association with local government authorities. Visit of Her Majesty Queen Elizabeth II and His Royal Highness the Duke of Edinburgh.

1955—Wheat harvest, 53 million bushels ; record average yield of 18·4 bushels per acre. Encouraging reports on experimental crops of sugar-cane and rice at Kimberley Research Station. Opening in January of new harbour and large anchorage in Cockburn Sound to serve Kwinana industrial area. Official opening of Kwinana oil refinery in October after nine months in operation. Production of sawn timber from local logs for year ended 30th June, 225·8 million superficial feet, the highest ever recorded. Houses completed, 8,772, the greatest number recorded in any year ; total completions since the war more than 50,000. Amendment to Western Australia Grant (Water Supply) Act raising the Commonwealth Government's contribution towards the increased cost of the Comprehensive Water Supply Scheme from £2·15 million to £4 million. Appeal for funds launched 1st September with target of £400,000 to supplement State Government grant for establishment of a medical school within the University. Free library opened at Claremont, the first metropolitan library sponsored jointly by the Library Board and a local government authority. Western Australia's membership in the House of Representatives raised from eight to nine as a result of the population increase disclosed by the census of the previous year.

1956—Great decline in migration. Four new savings banks established, three by private trading banks and one by the Rural and Industries Bank. An area of four square miles at Brecknock Harbour, 130 miles north-east of Derby, leased by the State for three years to a company for growing culture

pearls. New industry established at Capel and Bunbury for extracting ilmenite and other heavy minerals from beach sands. Oil exploration extended to Dirk Hartogs Island. Employment in factories for year ended 30th June exceeded 50,000 for the first time. Extension of water conservation works for supplies to metropolitan area by operations at Serpentine River upstream from Falls ; work on first stage, a pipehead dam, well advanced. Further epidemic of poliomyelitis, cases recorded during year numbering 401, of which 399 were reported in the six months to 30th June ; immunization project, using Salk vaccine, commenced 2nd July. Increased railway charges and closure of some branch lines recommended by Railways Commission to offset continued losses.

1957—Natural increase of population, 11,627, the highest ever recorded. Suspension for trial period of rail services on 800 miles of branch lines, in effort to reduce continued losses, with concurrent introduction of alternative transport by road. In September, wool auctions held at Albany for the first time. Small initial harvest of culture pearls from Brecknock Harbour, north-east of Derby. Gold production 896,681 fine ounces, valued at £14·5 million, the highest since 1941. Generation of electricity at Bunbury power station commenced in May. Completion of first stage of £9 million Serpentine Dam project ; work begun on main reservoir. Provision by Commonwealth, under the Western Australia Grant (Water Supply) Act, of £1 million additional financial aid for the Comprehensive Water Supply Scheme. Spectacular decline in incidence of poliomyelitis, only three cases being recorded compared with an annual average of 164 in the nine-year period from 1948, when the first major epidemic occurred, to 1956 when Salk vaccine injections began. Clinical teaching begun at University's School of Medicine. Integration of Commonwealth and State statistical services. Acquisition by Perth City Council of the Perth Literary Institute ; City Library established 1st July.

1958—Western Australia Grant (Northern Development) Act passed by Commonwealth Parliament, authorizing payment of £2·5 million, to be spread over five years, for development of the part of the State north of 20°S. latitude. Metropolitan (Perth) Passenger Transport Trust began passenger transport operations by assuming control of five private omnibus services. Last tram service in Perth on 19th July, with substitution of trolley buses and omnibuses. Rice first produced in significant quantity at Camballin on Fitzroy River 65 miles south-east of Derby. State Government's application to the Commonwealth for a licence to export one million tons of iron ore to Japan rejected 13th May. In November, slight traces of oil found in tests at Meda No. 1 well, in the Fitzroy section of the Canning Basin, 40 miles from Derby. Announcement by a mining company of a scheme to prospect for bauxite over a large area in the Darling Range. New Chest Hospital at Hollywood officially opened in September. Following negotiations between employers' and employees' organizations, agreement registered by Court of Arbitration on 1st April providing for long service leave for employees at the rate of 13 weeks' leave with pay for every 20 years of continuous service and 6½ weeks for each subsequent 10 years ; legislation later in year extended these benefits to employees not covered by the agreement. Visit in March of Her Majesty Queen Elizabeth the Queen Mother.

1959—Population increase 11,495, the smallest since 1947. Reduction of five per cent. in income tax payable by individuals. State Grants Act passed by Commonwealth Parliament repealing States Grants (Tax Reimbursement) Acts and substituting a system of payments to be known as Financial Assistance Grants. Amendment to Western Australia Grant (Northern Development) Act increasing to £5 million Commonwealth aid for development of the part of the State north of 20°S. latitude. Decline in export prices of greasy wool and of wheat ; average f.o.b. value of wool 50·01 pence compared with 71·20 pence per lb. in 1957–58, and of wheat 14s. 1d. per bushel, 1s. 3d. less than in 1957–58. Progressive easing of Commonwealth import restrictions during year, including relaxation of discrimination against the dollar area ; from 1st December, Australia's import ceiling raised to £875 million per year. Narrows Bridge and Kwinana Freeway, linking Perth with Canning Highway at Canning Bridge, opened to traffic. Inauguration of radio-telephone service connecting Derby and Broome with Australian and oversea telephone systems. Construction of commercial television company's transmitter at Bickley begun in January ; first full-scale transmission 16th October. Erection in October of television transmitter tower for Australian Broadcasting Commission. Increase in fish production for year ended 30th June ; crayfish catch 17·5 million lb. live weight, equal to two-thirds of Australian total. Search for oil continued over a wide area of the State ; new Petroleum Search Subsidy Act passed by Federal Parliament extending the provisions of a similar Act of 1957 and authorizing payment of subsidies on approved stratigraphic drilling and geophysical and bore-hole surveys. Trial shipment of bauxite from deposits in Darling Range sent to Tasmania in November for metallurgical plant tests. Tenders called by State Government for export of iron ore ; application for export licence again rejected by Federal





State Treasury, Saint George's Terrace, Perth

The building, originally the General Post Office, was completed in 1890

Commonwealth Government Offices, William Street, Perth

The building, which was completed in 1959, provides accommodation for the Repatriation Department, the Department of Customs and Excise and the Department of the Interior

Government. Output of electricity from power station at Bunbury increased with completion in April of a second unit of 30,000 kilowatts capacity. Continuation of work on final stage of modified Comprehensive Water Supply Scheme and announcement of plans to seek Commonwealth financial assistance for extension to full area of original scheme as first proposed in 1946. Preliminary work begun on diversion weir on Ord River as first stage of irrigation scheme, an " approved project " under the Western Australia Grant (Northern Development) Act. Construction of Institute of Radiotherapy begun on site at Hollywood adjacent to Perth Chest Hospital. First regular School of the Air in the State opened in September, broadcasting from Meekatharra base radio of Royal Flying Doctor Service. After six years in office, Labour government defeated at State general elections held 21st March ; Liberal and Country Party coalition government in office from 2nd April with Hon. David Brand as Premier. Appointment in June of Royal Commissioner to inquire into and report upon betting on horse racing ; report presented in December recommending, among other things, the abolition of licensed betting shops and the establishment of an off-course totalizator system.

1960

Demography—Crude birth rate 23·41 per thousand of mean population, the lowest since 1945.

Public Finance—State deficit for year ended 30th June, £1·4 million (expenditure £65·8 million, revenue £64·4 million). Budget for 1960–61 presented 22nd September ; estimated deficit £0·8 million (expenditure £69·8 million, revenue £69·0 million). Federal budget provided for discontinuance of the five per cent. rebate of tax on income of individuals and an increase of 6d. in the £ in tax payable on income of companies ; further increases in rates of age, invalid, widows' and war and service pensions ; liberalized means test for age, invalid and widows' pensions substituting one composite figure for the separate means tests previously applied to income and to property ; free medical treatment for service pensioners on account of disabilities not due to war service. Announcement in November of Federal Government action to arrest fall in Australia's oversea reserves and to control excess spending ; measures included increased restraint on bank advances, higher bank interest rates, a rise in sales tax on motor vehicles (on cars and station wagons from 30 per cent. to 40 per cent., and on motor cycles and motor scooters from 16⅔ per cent. to 25 per cent.) and compulsory investment in government securities by life insurance companies and superannuation funds. From 4th July, refund by State Treasury to motion picture exhibitors of entertainments tax paid on cinema admissions ; maximum individual refund £20 per week. Presentation to Commonwealth Parliament in August of report of Decimal Currency Committee recommending adoption of decimal system.

Private Finance—Personal income for year ended 30th June, £322·4 million (wages, salaries, etc. £204·0 million ; cash benefits from public authorities £28·6 million ; farm income £28·3 million ; income from dwelling rent £11·4 million ; all other income £50·1 million) or £449 per head of mean population. Commonwealth Banking Corporation commenced operations 14th January as authority controlling affairs of Commonwealth Trading Bank, Commonwealth Savings Bank and Commonwealth Development Bank of Australia. Balances outstanding at end of year on hire purchase agreements and other instalment credit for retail sales of goods amounted to £46·2 million, an increase of almost 35 per cent. during the year. Value of retail sales of goods amounted to £235·2 million, an increase of nearly 13 per cent. over previous year.

External Trade—Value of oversea exports for year ended 30th June, £120·1 million, an increase of £28·3 million from previous year ; favourable balance of £73·9 million in oversea trade. Continued deterioration in interstate trade position ; deficit increased from £66·5 million to £84·4 million. Unfavourable balance of £10·5 million in total external trade, £9·2 million less than that for 1958–59. Substantial recovery in export price of greasy wool but further decline in wheat price ; average f.o.b. value of wool 62·79 pence per lb. and of wheat, 13s. 5½d. per bushel. Further relaxation of Commonwealth import restrictions announced in February ; as a result, 90 per cent. of Australia's imports free from import licensing. South-East Asian Exports Committee established in March by Department of Industrial Development.

Transport and Communication—Two of the branch lines on which rail services were suspended in 1957 reopened for traffic 18th January on seasonal basis for carriage of grain and fertilizers. Cessation of services on 670 miles of railway authorized by Parliament under the Railways (Cue-Big Bell and other Railways) Discontinuance Act. From 1st July, Metropolitan (Perth) Passenger Transport Trust assumed control of trolley-bus, motor omnibus and ferry services formerly operated by Tramways and

Ferries Department, and from 1st September the omnibus service of the Fremantle Municipal Transport Board. Registrations of new motor vehicles (including motor cycles) 22,855, more than 16 per cent. greater than in 1959. Visit in February of members of Select Committee appointed by the Senate to inquire into road safety ; report presented in September. Work commenced in October on new passenger terminal building at Perth Airport. First stage of new oversea passenger terminal at Port of Fremantle officially opened 12th December. Completion in June of sealing of highway between Coolgardie and Esperance to assist development of Esperance Plains area. Australian Broadcasting Commission's television station, ABW (Channel 2), began transmission 7th May. Television viewers' licences at 31st December numbered 57,792 compared with 9,621 at end of previous year. Radar weather-tracking system began operating at Perth in August. Work begun at Muchea in April on satellite-tracking station as part of United States project for manned space-flight.

Rural Industry—Agricultural season opened in May with good general rains ; falls in June and August below normal but above-average rains in July and September, followed by periods of fine weather, provided excellent growing conditions. Wheat harvest 63·9 million bushels ; barley production 8·5 million bushels, the highest ever recorded ; oats crop 21·8 million bushels, an increase of more than 2 million bushels over previous season. Wool production 191·3 million lb. New programme of wool sales providing for increased number of auctions ; Perth sales discontinued and selling centre transferred to Fremantle. Increased Commonwealth financial assistance to Kimberley Research Station for expanded programme of research. Presentation to Commonwealth Parliament in November of report of Dairy Industry Committee of Enquiry.

Fisheries—Crayfish catch for year ended 30th June, 19·5 million lb., the highest yet recorded, an increase of nearly 12 per cent. on previous year and representing almost 70 per cent. of Australian total. Conclusion in March of survey of crayfish resources off the south coast, conducted by Department of Primary Industry at request of State Government ; investigation showed that crayfish numbers insufficient to support commercial fishery. Two three-year licences granted for establishment of pearl culture farms at Malumbo Anchorage in King Sound and at Exmouth Gulf near Giralia Landing.

Mining—Work commenced on development of iron-ore deposits on Koolan Island in Yampi Sound ; discovery and exploration of large deposits of lower grade at Scott River near Augusta. Announcement in December of Commonwealth Government decision to modify embargo on export of iron ore, in force since 1938, to permit export on a limited basis subject to certain controls. First commercial shipments of bauxite from deposits in Darling Range ; trial consignments to Japan for plant tests in connexion with proposed establishment of alumina industry in Western Australia. Visit in May by French oil exploration experts ; favourable reports made on Fitzroy and Carnarvon Basins. In November, Tariff Board recommendations in relation to pyrites and sulphuric acid included an extension of the bounty for five years with separate payments on pyrites and on sulphuric acid.

Secondary Industry—Employment in factories for year ended 30th June, 49,651, the highest since 1955–56 ; net factory production £86·4 million, an increase of nearly 10 per cent. over 1958–59. Recovery in butter production and continued increase in quantity of cheese made. Output of pig iron 47,536 tons, almost double that of previous year. Sawn timber production from local logs 198·9 million superficial feet, the lowest since 1951–52. Third unit of 30,000 kilowatts capacity in production at Bunbury power station in May. Announcement in May by BP Refinery (Kwinana) Ltd. of decision to add a lubricating oil refinery to its plant at Kwinana. In November, negotiations announced between State Government and Broken Hill Proprietary Company Ltd. for establishment at Kwinana of an integrated iron and steel industry. Announcement in December of decision of British chemical firm to build a large titanium oxide pigment factory at Bunbury. Special section of Department of Industrial Development established in April to encourage decentralization of industry and to assist country local government authorities in attracting industries. Visit in October of British industrialists at invitation of State Government to report on prospects for future industrial expansion. Value of all new buildings completed £33·89 million, almost 20 per cent. greater than in 1959.

Water Supplies—Contract signed in November for construction of Ord River diversion dam ; work begun early in year at Kununurra, the townsite for the project. Completion of raising of wall of Wellington Dam, increasing capacity from 8,000 million to 40,790 million gallons. Modified Comprehensive Water Supply Scheme nearing completion, all towns included in the scheme having been connected and reticulation to agricultural areas proceeding north of Cunderdin and south of Merredin ; rejection by Commonwealth Government of State's request for financial assistance to extend the scheme to the boundary

as originally proposed in 1946. Water restrictions in metropolitan area continued, but relaxation from 29th January of general ban on use of sprinklers and fixed hoses, which had applied 24 hours per day from 1st October, 1959 ; restrictions lifted from 29th March. Increase from 2s. to 2s. 3d. per thousand gallons in charge for excess water supplied to domestic consumers in metropolitan area ; committee appointed in June to consider possible changes in metropolitan water rates and charges.

Health—Committee appointed in March to study future needs of State's mental health services ; report presented in November recommending, among other things, transfer of all children from Claremont Mental Hospital to a new child psychiatric hospital and removal of aged patients to other accommodation. Royal Flying Doctor Service scheme to fly doctors and dentists to conduct clinics in remote areas inaugurated in March. Following a conference of Health Ministers held at Sydney in January, State Government representatives appointed to special committee to examine all aspects of housing and care of the aged. First phase of National Heart Campaign in Western Australia begun at Perth in November.

Education—Official opening in June of Saint Catherine's College, the University's first residential college for women students. Public appeal for £70,000 to establish a Chair of Commerce at the University launched in September. Announcement in October of substantial increases in faculty service charges to be paid by University students from beginning of 1961 academic year. Bequest to University of estate of late Mrs. M. B. Raine, valued at £688,784. First report of the Australian Universities Commission presented to Commonwealth Parliament in November, reviewing university development and containing recommendations regarding future requirements. Announcement in September of revised system of scholarship awards for post-primary education.

Prices, Wages and Employment—A new retail price index, the Consumer Price Index, calculated retrospectively to 1949, published by Commonwealth Statistician in August to replace the " C " Series Retail Price Index, originally compiled in 1921, and the Interim Retail Price Index, first issued in 1954 as a transitional index. Consumer Price Index for Perth for year 119·2, an increase of 3·2 per cent. over that for 1959, and greatest proportional increase in any year since 1956. Rise of 13s. 1d. in State basic wage for males in metropolitan area, the largest in any year since 1952. State basic wage for adult females increased from 65 per cent. to 75 per cent. of male rate from beginning of first pay-period commencing on or after 30th January. In April, Commonwealth Conciliation and Arbitration Commission rejected application by trade unions for increase in Commonwealth basic wage and restoration of automatic quarterly adjustments. Average weekly earnings per employed male unit for year ended 30th June, £19·46, almost seven per cent. higher than in 1958–59 and greatest proportional increase in any year since 1952–53. Average number of wage and salary earners in civilian employment (excluding those in rural industry and household domestic service) 199,000, an increase of 4,600 over previous year. Average number of persons receiving unemployment benefit during year 1,996, a substantial decrease from previous year ; persons on benefit at end of year 1,890 compared with 2,538 at end of 1959. Industrial disputes, principally in the stevedoring and coal-mining industries, involving the loss of 27,342 working days, the largest loss in any year since 1956. Amendment to Conciliation and Arbitration Act authorizing increase from three to four in number of Judges of Commonwealth Industrial Court.

Legislation and Administration—Parliamentary session opened 28th July, ended 25th November. Legislation included the Administration Act Amendment Act providing for the appointment of a Commissioner of Probate Duties to assume the probate assessment and related functions previously exercised by the Commissioner of Stamps ; the Anzac Day Act permitting the sale of liquor and the holding of race meetings and sporting events after 1 p.m. on Anzac Day and establishing an Anzac Day Trust, to be financed from fees paid for occasional liquor licences and the proceeds of race meetings and sporting events, for the assistance of organizations operating for the benefit of ex-service personnel and their dependants ; the Broken Hill Proprietary Company's Integrated Steel Works Agreement Act ratifying an agreement between the Government and the company for the establishment of an integrated iron and steel industry at Kwinana, subject to provision by the Government of a standard gauge railway between Southern Cross and Kwinana ; the Chevron-Hilton Hotel Agreement Act ratifying an agreement between the Government and Chevron-Hilton Hotels Limited for the construction and establishment by the company of a hotel and tourist centre in Perth ; the Church of England in Australia Constitution Act, complementary to similar legislation in other Australian Parliaments to give full autonomy to the Church of England in Australia and to ensure continuity of its identity as a branch of the Anglican Communion ; the Coal Mine Workers (Pensions) Act Amendment Act extending the provisions of the Act to include certain workers and their dependants previously ineligible for benefits ; the Country High School Hostels Authority Act constituting an Authority to establish and maintain hostels for

students where transport to and from school is not provided by the Government; the Criminal Code Amendment Act increasing penalties for deprivation of liberty and for child stealing, and incorporating as an offence the publication, without the prior approval of the Commissioner of Police, of any report of a case of child stealing within seven days from the date of the crime; the Dairy Cattle Industry Compensation Act establishing a fund for compensation of owners of cattle slaughtered as a result of compulsory tests for disease; the Education Act Amendment Act changing the title of Director of Education to Director-General of Education and establishing a Government School Teachers' Tribunal with jurisdiction to hear and determine appeals and disputes concerning salaries, promotions, suspensions, dismissals and other matters; the Esperance Lands Agreement Act ratifying an agreement between the Government and American Factors Associates Limited and Arcturus Investment and Development Limited for the acquisition and improvement of certain Crown land in the Esperance area; the Fisheries Act Amendment Act relating to penalties for traffic in undersize crayfish tails; the Health Act Amendment Act constituting a Maternal Mortality Committee for the private investigation of cases of maternal mortality in place of a magisterial or coronial inquiry as formerly; the Land Tax Assessment Act Amendment Act providing for a reduction of 10 per cent. in tax payable on improved land; the Local Government Act consolidating and amending the law relating to local government and repealing the Municipal Corporations Act and the Road Districts Act; the Metropolitan Region Town Planning Scheme Act Amendment Act making the principal Act a permanent Act by repealing the provision limiting its operation to the 30th June, 1962; the Metropolitan Water Supply, Sewerage, and Drainage Act Amendment Act substituting a new annual value of land for rating purposes and constituting an Appeal Board to which a ratepayer may appeal against any valuation of land owned or occupied by him; the Milk Act Amendment Act empowering the Milk Board to fix minimum standards of quality for milk and cream and to prevent their distribution if below the prescribed standard; the Northern Developments (Ord River) Pty. Ltd. Agreement Act ratifying an agreement between the Government and the company for the establishment of a pilot farm to investigate irrigation farming methods in the Ord River area; the Paper Mill Agreement Act ratifying an agreement between the Government and Australian Paper Manufacturers Limited for the establishment of a paper and paper board mill; the Railways (Cue-Big Bell and other Railways) Discontinuance Act authorizing the cessation of services on certain railways formerly operated by the Government; the Supreme Court Act Amendment Act authorizing the appointment of six Judges, in addition to the Chief Justice, instead of four as previously; the Totalisator Agency Board Betting Act constituting a Totalisator Agency Board to replace the Betting Control Board and providing for the introduction of an off-course totalizator agency system and the control of off-course betting; and the Workers' Compensation Act Amendment Act providing that in the case of disablement or death from silicosis, pneumoconiosis or miner's phthisis the benefits of the Act shall apply irrespective of the lapse of time since the worker affected was engaged in employment causing the disability, and that a standard form of insurance policy shall be adopted by all insurers. Among Bills introduced but not passed were the Death Penalty Abolition Bill seeking to abolish capital punishment; the Licensing Act Amendment Bills (Nos. 2 and 3) designed to extend to certain hotels now excluded the Sunday trading provisions of the Licensing Act; the Metropolitan Region Improvement Tax Act Amendment Bill to impose a permanent Metropolitan Region Improvement Tax; and the State Concerns (Prevention of Disposal) Bill to prevent the sale or lease of certain specified State Trading Concerns without parliamentary approval.

Appointment in February of honorary Royal Commission to inquire into the practice of natural therapy, and in November of Royal Commission to investigate allegations that Members of Parliament had been offered bribes to oppose the Totalisator Agency Board Betting Bill. Mr. John Hale, Q.C. appointed Acting Judge of the Supreme Court in March and Judge in October. Appointment of first members of Metropolitan Region Planning Authority in April, of Art Gallery Board and Museum Board in May, and of Country High School Hostels Authority in November.

From 4th January, hotel trading hours in south-west of State altered from 9 a.m.-9 p.m. to 10 a.m.-10 p.m.

In August, first women jurors empanelled under the Juries Act, 1957.

In November, Mangles' Kangaroo Paw (*Anigosanthos Manglesii*) officially declared to be State's floral emblem.

Death in January of Mr. P. R. Lawrence, M.L.A. for South Fremantle, in August of Mr. F. C. L. Smith, a former Minister for Railways and Justice, and in September of Professor R. G. Cameron, the University's first Professor of Education.

On 2nd February, Viscount Dunrossil sworn in as Governor-General of Australia.

Miscellaneous—Severe floods in February and cyclone in March caused considerable damage in Carnarvon area. In December, extensive bush fires in Chittering area with loss of stock and pastures. Completion of four-year mapping programme of 100,000 square miles in Kimberley. Survey begun by Bureau of Mineral Resources to map the Rawlinson area and thus complete mapping of south-eastern part of Canning Basin. From 2nd February all aboriginals, other than the nomadic or primitive, eligible for age, invalid and widows' pensions and maternity allowances. From 1st March charge of 5s. payable, except in the case of pensioners, for each prescription written under pharmaceutical benefits scheme. Opening at Caversham in May of " Riverbank," a maximum security institution for delinquent boys. Appointment of honorary agents for Child Welfare Department arranged with country local government authorities to provide immediate relief in certain cases of financial hardship, to make inspections and to give advice. State Government contribution towards maintenance of migrant children in institutions reduced to 6s. per week for each child migrating after 1st September, instead of £1 3s. 3d. per week as formerly. Plans announced in September for establishment near Serpentine of new prison farm for rehabilitation of selected prisoners. Winning design for new Perth Town Hall chosen in September. National Service Training Scheme formally ended and trainees discharged.

1961

Demography—Sixth Commonwealth census, 30th June. State population 736,629 (males 375,452, females 361,177), an increase of 96,858 persons or 15·1 per cent. since previous census in 1954. Metropolitan population 420,133 compared with 348,647 seven years earlier, an increase of 71,486 persons or 20·5 per cent. Further decline in crude birth rate, to 23·16 per thousand of mean population. Infant mortality rate, 19·67 per thousand live births, the lowest ever recorded.

Public Finance—State deficit for year ended 30th June, £1·2 million (expenditure £70·5 million, revenue £69·3 million). Budget for 1961–62 presented 28th September ; estimated deficit £1·2 million (expenditure £75·1 million, revenue £73·9 million). From 22nd February, sales tax on motor cars and station wagons reduced from 40 per cent. to 30 per cent., and on motor cycles and motor scooters from 25 per cent. to 16⅔ per cent., thus restoring rates of tax to levels applying prior to 16th November, 1960. Amendment to Pay-roll Tax Assessment Act operative from 19th May providing for rebates of tax as an incentive to increase exports. From 1st June, abolition of excise duty on coal exported and reduction from 5d. to 4d. per ton in levy on coal consumed in Australia. From 16th August, exemption from sales tax of specified goods used by industries engaged in public transport services and of road trains and other vehicles and equipment used in prescribed areas for the transport of livestock ; reduction from 8⅓ per cent. to 2½ per cent. in rate of tax on household furniture, furnishings and appliances. Increases in age, invalid, widows', war and service pensions, unemployment and sickness benefits and tuberculosis allowances. Grants and subsidies amounting to £36,853 paid during year ended 30th June to public authorities and other organizations from Tourist Fund established under the Tourist Act, 1959.

Private Finance—Personal income for year ended 30th June, £343·9 million (wages, salaries, etc. £219·6 million ; cash benefits from public authorities £31·7 million ; farm income £29·6 million ; income from dwelling rent £11·9 million ; all other income £51·1 million) or £471 per head of mean population. From 1st January savings bank interest rates increased to 3½ per cent. per annum on deposits up to £2,500 held by Rural and Industries Bank and 3¼ per cent. per annum on those held by other banks. Further increase of ¼ per cent. per annum in each of these rates from 1st July and maximum interest-bearing deposit raised from £2,500 to £3,000. E.S. & A. Savings Bank Limited commenced operations 29th September. From 24th November, Saturday trading by banks (other than savings bank agencies) discontinued, with extension of trading hours to 5 p.m. on Fridays ; similar arrangement adopted by insurance companies. Housing finance, provided jointly by Rural and Industries Bank and State Government, made available in July in first of a series of " One Hundred Small Homes " plans ; maximum loan £3,500 with minimum deposit of 10 per cent. Value of retail sales of goods £237·0 million. Balances outstanding at end of year on hire purchase agreements and other instalment credit for retail sales of goods amounted to £46·0 million.

External Trade—Value of imports for year ended 30th June £178·0 million and of exports £204·8 million resulting in favourable trading balance, the first since 1956–57, amounting to £26·8 million. Oversea exports valued at £159·5 million, 32·9 per cent. higher than in previous year, and interstate exports worth £45·2 million, an increase of 16·2 per cent. Reduction from £123·3 million to £122·7

million in value of imports from other Australian States ; interstate trade deficit £77·5 million, compared with £84·4 million in 1959–60. Quantity of gold bullion shipped, 2,532,438 fine ounces, and value, £39·6 million, the greatest ever recorded. Other export items showing considerable increases in quantity since previous year were wheat 42·9 per cent., oats 82·2 per cent., greasy wool 18·7 per cent., frozen and chilled meats 7·7 per cent., apples 105 per cent., iron ore 89·5 per cent., ilmenite concentrates 47·1 per cent., and petroleum products 30·5 per cent., and among those which decreased in volume were sawn timber 9·8 per cent., crayfish tails 22·7 per cent., asbestos 27·6 per cent. and manganese ore 40·2 per cent. Average f.o.b. value of greasy wool exported 53·94 pence per lb. compared with 62·79 pence per lb. in 1959–60, and of wheat 13s. 7d. per bushel, a slight improvement on the average of 13s. 5½d. per bushel for 1959–60. First oversea export of rice grown in Kimberley.

Transport and Communication—Provision in Federal budget for expenditure by Commonwealth Government of an amount of £150,000 to meet cost of surveying proposed route of standard gauge railway between Kalgoorlie and Kwinana ; survey begun in September. Passage by Commonwealth Parliament of Railway Agreement (Western Australia) Act providing for financial assistance to the State in constructing and equipping the railway ; agreement ratified by State Parliament by means of Railway Standardisation Agreement Act and authority for construction given by Railways (Standard Gauge) Construction Act. Western Australian Government Railways deficit (including depreciation and interest charges) for year ended 30th June £3·25 million, almost £1·15 million less than for previous year ; operating revenues exceeded operating expenses for first time since 1945–46. Publication of proclamations under Railways (Cue-Big Bell and other Railways) Discontinuance Act of 1960 officially closing 272 miles of line formerly operated by Western Australian Government Railways. Last remaining passenger ship on interstate coastal service, m.v. *Manoora*, sold to Indonesian interests ; restrictions applying to carriage of passengers by oversea liners between Australian coastal ports liberalized from 1st March and abolished 9th August. Inauguration in August of new shipping service providing direct route between Western Australia and ports in south-east Asia ; in November trade display, organized by Department of Industrial Development, sent to these ports by freighter engaged in the service. Following adverse comments by Commonwealth Grants Commission on State Shipping Service deficits, investigation of operations of Service begun in November for State Government by Captain J. P. Williams, Chairman of Australian Coastal Shipping Commission. Western Australia Grant (Beef Cattle Roads) Act passed by Commonwealth Parliament authorizing payment of grant of £500,000 subject to expenditure by the State Government of the same amount during 1961-62 on improvement of roads and construction of bridges to facilitate access to port of Wyndham from Nicholson and other cattle stations in eastern part of Kimberley. Sealing of North-West Coastal Highway completed as far as Carnarvon, 612 miles by road from Perth. Contribution by Commonwealth Government of one-half of expenditure of £320,000 necessary to restore roads damaged by floods in the North-West between January and March. First pile driven 24th November for new railway bridge across Swan River at Fremantle. Metropolitan (Perth) Passenger Transport Trust assumed control of three of the four remaining privately-operated metropolitan omnibus services. Registrations of new motor vehicles (including motor cycles) 19,975, a decrease of 2,880 from 1960. Official opening 27th November of new telephone service between Perth, Marble Bar, Port Hedland and Roebourne. Television viewers' licences at 31st December numbered 77,610, an increase of almost 20,000 since the end of 1960. Official opening 24th March of satellite-tracking station at Muchea, one of a series constructed at sites around the world by the United States Government in connexion with its Project Mercury for manned orbital flights.

Rural Industry—Excellent opening rains in most agricultural districts in April. Rainfall in May below normal, in June above average in most areas, in July and August generally below average. Conditions in September were warm and dry and, although good finishing rains were acking in October, fairly frequent light falls brought an end to a very satisfactory season. Wheat harvest 65·7 million bushels, 1·8 million bushels greater than in previous season, but decline in production of oats and barley. Wool production 192·2 million lb., the highest ever recorded. Collapse of tobacco market at annual auction sales held at Fremantle in August, more than one-half of the leaf offered remaining unsold and average price realized being 63 pence per lb. compared with 101 pence per lb. in 1960 ; approval given by Western Australian Potato Marketing Board to the planting by tobacco growers of 250 acres of potatoes as an alternative crop. In November, visit of Dutch agricultural consultant at invitation of State Government to report on possibilities of improving the yield and quality of flax straw and methods of processing. Appointment by Commonwealth Government in January of committee to inquire into marketing and promotion of Australian wool.

Fisheries—Crayfish catch for year ended 30th June, 18·0 million lb., lower than in previous year but equivalent to two-thirds of total Australian catch. New plant at Jurien Bay for processing crayfish and other fish officially opened 3rd November. Substantial fall in production of pearl-shell to 358 tons, the lowest since 1952. Additional licences issued for pearl culture on West Kimberley coast. Commencement in August of one-year survey of waters between Doubtful Island Bay and Jurien Bay to examine prospects for establishment of commercial tuna fishing. Commonwealth and State Ministers responsible for fisheries decided at conference in Canberra on 1st September to establish an Australian Fisheries Council at Ministerial level.

Mining—Production of iron ore 1,359,548 tons, almost 50 per cent. greater than in 1960. Announcement in March of decision by State Government to subdivide iron-ore deposits, other than those reserved for the domestic iron and steel industry, into three categories. The first category includes known high-grade deposits, not covered by lease agreements, which are to be retained by the Crown. The second category, being known medium and low-grade deposits, and the third category, comprising deposits as yet undiscovered, may be made the subject of temporary reservations. As a result, 87 temporary reserves granted in July over an area of 4,130 square miles with exclusive rights to prospect for iron ore for a period of two years. Passage by State Parliament of Iron Ore (Scott River) Agreement Act, ratifying an arrangement with Mineral Mining and Exports (W.A.) Pty. Ltd. for the establishment of an industry to process iron ore in Scott River area near Augusta, and Iron Ore (Tallering Peak) Agreement Act incorporating an agreement with Western Mining Corporation Limited for mining and export of iron ore from Tallering Peak area. Announcement by Minister for National Development in November of existence of extensive iron-ore deposits in the Pilbara. Amendment to Gold-Mining Industry Assistance Act (Commonwealth) enabling a producer whose annual output is in the range of 501 to 1,075 ounces to elect to be treated as a " small " producer in order to qualify for assistance on more advantageous terms. Continued search for oil over wide area, and drilling begun in Perth Basin on 15th June at Eneabba near Three Springs ; considerable quantities of fresh water encountered in course of drilling, as well as coal seams up to 100 feet in thickness at depths of between 6,000 and 7,000 feet. Amendment to Petroleum Search Subsidy Act passed by Commonwealth Parliament extending the duration of the Act and broadening the scope of assistance to operators engaged in oil exploration.

Secondary Industry—Net factory production for year ended 30th June £96·6 million, an increase of almost 12 per cent. over 1959–60. Butter production, 17·2 million lb., the greatest ever recorded but decline in quantity of cheese made. Continued increase in output of pig-iron. Further decrease, to 186·9 million superficial feet, in timber sawn from local logs. Increase in production of bricks, plaster, lime and fibrous plaster sheets. Electricity generated, 1,035 million kwh., more than 10 per cent. greater than in previous year. Completion of power station at Bunbury ; last of four units, each of 30,000 kilowatts capacity, brought into operation in July. Contracts let in September for construction of first section of major power station at Muja on the Collie coalfield. Construction of lubricating oil refinery at Kwinana begun in November. Ratification of agreements between State Government and two companies for the establishment of large industrial enterprises, one at Kwinana for the production of alumina from Darling Range bauxite and the other at Bunbury for the manufacture of titanium oxide pigments and acids, alkalis and other chemicals. Sale to private interests on 30th June of the trading concern formerly known as State Building Supplies, engaged in sawmilling and brickmaking, and of the Western Australian Government Railways sawmill at Banksiadale. Value of all new buildings completed £32·94 million compared with £33·89 million in 1960.

Water Supplies—Official opening 20th October of Serpentine Main Dam, with 39,000 million gallons capacity, for supply of water to metropolitan area. Plaque unveiled at Mundaring Weir 24th November to commemorate completion of modified Comprehensive Water Supply Scheme. Following Commonwealth Government's rejection of further submission for financial assistance in extending the Scheme, plans made by State Government for expenditure from its own funds in supplying towns of Dalwallinu, Pithara, Ballidu, Wongan Hills, Kojonup and Wickepin, as well as a limited area of farmlands adjacent to pipelines. Contract let in September for earthworks in connexion with Logue Brook Dam, with planned capacity of 6,000 million gallons, to augment supply of water to Harvey Irrigation District. Pouring of concrete for construction of wall of diversion dam on Ord River at Kununurra begun in June.

Health—Appointment in January of first members of Maternal Mortality Committee constituted under the Health Act Amendment Act of 1960. First students enrolled at School of Occupational Therapy established by Royal Perth Hospital. Institute of Radiotherapy, adjacent to Perth Chest

Hospital at Hollywood, officially opened 16th March. Completion in May of report of special committee appointed in November, 1960 to investigate future metropolitan hospital development. Introduction in October of system of payment for services of consultant medical practitioners at Princess Margaret Hospital for Children ; system to operate for trial period with provision that practitioners electing to work without fee may continue to do so.

Education—Approval by University Senate of new system of enrolment fees, to apply from beginning of 1962 academic year, at rates considerably higher than faculty service charges previously levied ; increase necessary to assist in meeting rising costs of operation and to enable University to take full advantage of Commonwealth financial aid available under States Grants (Universities) Act. Faculty of Economics reconstituted as Faculty of Economics and Commerce ; appointment of first Professor of Commerce. Opening of John Thomson Agricultural Economics Centre at University as a research unit of the Institute of Agriculture for the study of economic aspects of agricultural problems. Opening in February of Carlisle Technical School as centre of instruction in automotive trades. Kimberley School of the Air, to supplement correspondence tuition given by Education Department, began regular transmission from Derby in April after trial period of operation in previous year. Additional hostels opened by State Government, at Yalgoo 18th March, Onslow 20th April, and Cue 3rd June, to provide living accommodation for aboriginal native children while attending school. Construction begun at Merredin of first hostel to be built for Country High School Hostels Authority.

Prices, Wages and Employment—Consumer Price Index for Perth 121·8 compared with 119·2 for 1960. Reduction from 1st March in charges for electricity and gas supplied by State Electricity Commission. Further increase, from 2s. 3d. to 2s. 9d. per thousand gallons, in charge for excess water supplied to domestic consumers in metropolitan area. In judgment delivered 4th July, Commonwealth Conciliation and Arbitration Commission increased by 12s. per week the basic wage payable to adult males ; rejection of employers' claim for increase in standard hours of work from 40 to 42 with concomitant increase in the weekly wage by an amount equivalent to two hours' pay at ordinary rates. In determining quarterly adjustment to State basic wage rates to apply from 1st May, Court of Arbitration for the first time used the Consumer Price Index instead of, as formerly, the " C " Series Index. In October, decrease of 1s. 9d. in State basic wage for adult males in metropolitan area, the first decrease since 1958 ; total increase in wage during year 4s. 2d., the smallest annual increase since 1958. Average weekly earnings per employed male unit for year ended 30th June, £20·57, an increase of 5·7 per cent. over average for 1959–60. Coal mine workers at Collie resumed work 31st January after a series of stoppages, extending over a period of almost four months from 12th October, 1960, in protest against proposed reallocation of State Government's coal orders involving an increase in open-cut production and consequent contraction in labour force. Three-year contracts operative from 1st January for supply of coal to Western Australian Government Railways and State Electricity Commission at average prices approximately 12s. per ton lower than previously. Coal production for year 765,740 tons, of which 33·9 per cent. won from open cuts, compared with 922,393 tons, 13·5 per cent. from open cuts, in 1960. Average number of men working at coal mines during year 582, a reduction of more than 400 from the average for 1960. From 28th October ten-shift fortnight introduced at Collie coal mines by agreement between workers and employers ; eleventh shift, of five hours on alternate Saturdays, eliminated without loss of pay in each fortnight where coal quota attained in ten working days. Average number of wage and salary earners in civilian employment (excluding rural industry and female private domestics) 201,100, an increase of 2,100 over previous year. Average number of persons receiving unemployment benefit during year 2,879, an increase of 883, or more than 44 per cent., over average for previous year ; persons on benefit at end of year 3,187, compared with 1,890 at end of 1960. Industrial disputes resulted in loss of 23,233 working days, of which 16,326 occurred in stevedoring and 5,025 in coal mining.

Legislation and Administration—Parliamentary session opened 3rd August, ended 15th November. Legislation included the Alumina Refinery Agreement Act ratifying an agreement between the Government and Western Aluminium No Liability relating to the establishment by the Company of a refinery at Kwinana for the production of alumina ; the Banana Industry Compensation Trust Fund Act establishing a Trust Fund financed by contributions from growers and appropriations by Parliament to cover losses from cyclones, floods or any other cause, including pests and diseases, constituting a threat to the existence of the industry ; the Bank Holidays Act Amendment Act authorizing the closure on Saturdays of banks other than savings bank agencies and extending trading hours to 5 p.m. on Fridays ; the Builders' Registration Act Amendment Act providing for the registration of only one class of builder by eventually eliminating the "B"-class builder ; the Building Societies Act Amendment Act revising

the requirements for registration of approved societies, creating an office of Registrar of Building Societies separate from that of Registrar of Friendly Societies and establishing a Building Societies Advisory Committee ; the Commonwealth and State Housing Agreement Act ratifying amendments to the 1956 Agreement and extending to 30th June, 1966 the period of operation of the Agreement as amended ; the Companies Act based on a draft of proposed uniform legislation prepared by Commonwealth and State Ministers and repealing the Companies Act, 1943–1960, except as it relates to co-operative companies and co-operative and provident societies ; the Criminal Code Amendment Act abolishing the death penalty for the crime of murder but retaining it in the case of wilful murder ; the Entertainments Tax and Assessment Acts Repeal Act abolishing entertainments tax by repealing the Entertainments Tax Assessment Act, 1925–1959 and the Entertainments Tax Act, 1925–1959 ; the Explosives and Dangerous Goods Act consolidating and amending the law relating to explosives and regulating the import, manufacture, storage, sale, use and carriage of explosives (including fireworks) and the storage of dangerous goods ; the Fisheries Act Amendment Act redefining the term " crayfish tail," and amending provisions relating to the seizure and measurement of fish and the labelling of consignments ; the Industry (Advances) Act Amendment Act authorizing advances to the Midland Railway Company of Western Australia Limited ; the Iron Ore (Scott River) Agreement Act ratifying an agreement between the Government and Mineral Mining and Exports (W.A.) Pty. Ltd. relating to the establishment by the Company of a processed iron-ore industry in the Scott River-Flinders Bay area, subject to land acquisition and provision of roads and electric power by the Government and guarantees by Heine Brothers (Australasia) Pty. Limited ; the Iron Ore (Tallering Peak) Agreement Act ratifying an agreement between the Government and Western Mining Corporation Limited for the mining and export by the Company of iron ore, pyrites and concentrates from the Tallering Peak area subject to construction by the Company of a railway between its workings and the railhead at Mullewa ; the Kwinana-Mundijong-Jarrahdale Railway Act authorizing the construction by the Government of a railway in terms of the agreement ratified by the Alumina Refinery Agreement Act ; the Laporte Industrial Factory Agreement Act ratifying an agreement between the Government and Laporte Industries Limited for the establishment near Bunbury of a chemical factory ; the Licensing Act Amendment Act extending prescribed hours for sale and consumption of liquor in licensed restaurants ; the Medical Act Amendment Act permitting the registration as medical practitioners of qualified persons engaged in teaching, research or post-graduate study at recognized institutions, and allowing medical officers employed solely by the Commonwealth to register as medical practitioners without payment of certain fees ; the Metropolitan Region Improvement Tax Act Amendment Act reducing the rate of tax from ½d. to ⅜d. in the £ after 30th June, 1962 ; the Mines Regulation Act Amendment Act requiring underground mine workings to be managed and supervised only by holders of specified certificates of competency and permitting Sunday work at Yampi Sound ; the Motor Vehicle (Third Party Insurance) Act Amendment Act reconstituting the Premiums Committee and clarifying and amending its reporting functions ; the Public Moneys Investment Act authorizing the investment of public moneys with approved dealers in the short-term money market and in other ways ; the Railways (Standard Gauge) Construction Act authorizing construction of railways between Kalgoorlie and Kwinana and between other centres cited in the Railway Standardisation Agreement Act; the Railway Standardisation Agreement Act ratifying an agreement between the Commonwealth and the State providing for Commonwealth financial assistance in the construction of specified standard gauge railways and the provision of certain rolling stock and other equipment ; the Registration of Births, Deaths and Marriages Act consolidating and amending the law relating to registration and repealing the Registration of Births, Deaths and Marriages Act, 1894–1948 ; the Stamp Act Amendment Act exempting from stamp duty transactions in the official short-term money market ; the State Housing Act Amendment Act reconstituting the State Housing Commission by reducing from three to two the number of members who are employed in the State Public Service and substituting "a person with a wide knowledge of and experience in housing conditions " ; the State Transport Co-ordination Act Amendment Act dissolving the Western Australian Transport Board and assigning its powers and functions to a Commissioner of Transport assisted by a Transport Advisory Board ; the Tallering Peak-Mullewa Railway Act authorizing Western Mining Corporation Limited to construct a railway between Tallering Peak and Mullewa in terms of the Iron Ore (Tallering Peak) Agreement Act ; the Traffic Act Amendment Act limiting the number of taxi-car licences which may be issued in respect of the Metropolitan Traffic Area to one licence for every 700 of the population instead of one for every 600 as formerly ; and the Welfare and Assistance Act authorizing and regulating financial assistance to be extended by the State to indigent persons and providing for the recovery of moneys used for the purpose. Among Bills intro-

duced but not passed were the Criminal Code Amendment Bill (No. 2) designed to require the attendance of at least two Ministers of the Crown at executions ; the Mental Health Bill seeking to consolidate and amend the law relating to the treatment of mental disorder ; the Natives (Citizenship Rights) Act Amendment Bill aiming to grant citizenship rights by birth to aboriginal natives born after the 1st January, 1955 ; the Totalisator Agency Board Betting Act Amendment Bill (No. 2) designed to prevent credit betting, to enable the Auditor-General to prescribe and inspect the accounts kept, and to increase the proportion of the Board's money invested on racecourse totalizators ; and the Western Australian Marine Act Amendment Bill seeking to require the licensing of private power-boats.

Local Government Act of 1960, consolidating and amending the law relating to local government, operative from 1st July. Matrimonial Causes Act 1959 (Commonwealth), providing a uniform divorce law applicable throughout Australia, operative from 1st February. Enactment by Commonwealth Parliament of a Marriage Act to provide uniform marriage law.

Appointment of Royal Commission to inquire into handling, marketing and shipping of apples. Presentation to Parliament of reports of Royal Commissions to investigate allegations that Members of Parliament had been offered bribes to oppose the Totalisator Agency Board Betting Bill ; to inquire into the causes, origins and development of bush fires during the period from December, 1960 to March, 1961 ; on Builders' Registration ; and of honorary Royal Commission to inquire into the practice of natural therapy.

Electoral Commissioners appointed in June to consider reallocation of boundaries of Electoral Districts and Electoral Provinces for State parliamentary elections ; report published in *Government Gazette* 14th December creating one additional metropolitan District and abolishing one District in the agricultural, mining and pastoral area.

Death in February of Rt. Hon. Viscount Dunrossil after one year in office as Governor-General of Australia. Appointment of Rt. Hon. Viscount De L'Isle, V.C., P.C., G.C.M.G., K.St.J. as Governor-General ; oath of office administered 3rd August.

At Federal elections held 9th December, Liberal-Country Party Government returned to office with majority in House of Representatives reduced from 32 to two seats ; from 1st July, 1962, Government representation in Senate reduced from 32 to 30.

Select Committee appointed in April by House of Representatives to consider the extension of voting rights to aboriginal natives ; report presented in October recommending that voting rights be conferred, that enrolment be voluntary, and that voting be compulsory for enrolled aboriginals.

Miscellaneous—Unusually intense cyclonic activity in northern and north-western areas early in year. At Onslow extensive damage to jetty, and town inundated by sea ; damage to houses and installations at Yampi Sound and Port Hedland ; banana plantations destroyed by cyclones at Carnarvon and town evacuated as result of serious flooding. Disastrous bush fires over a large area of jarrah and karri forests in the south-west during January, February and March ; settlement at Nanga Brook burnt out and townships of Dwellingup and Holyoake almost wholly destroyed.

Merged means test relating to age, invalid and widows' pensions operative from 1st March, replacing separate means tests formerly applied to income and to property.

Official opening 24th March of 12-storey building in Barrack Street, Perth as headquarters of Rural and Industries Bank.

Contract signed 5th October for erection of administration building for Perth City Council as first unit of a group to incorporate a new Perth Town Hall ; work begun on foundations in November.

First two agencies operated by Totalisator Agency Board for off-course betting on totalizators opened in Perth 18th March.

Visit in July of the Right Honourable the Lord Mayor of London, Sir Bernard Waley-Cohen, the first Lord Mayor of London to visit Australia while in office.

Death in February of Professor F. R. E. Mauldon, Professor of Economics at the University from 1941 to 1958 and first Dean of the Faculty of Economics ; in July, of Mr. H. D. Andrew, M.L.A. for Victoria Park ; and in November, of Hon. C. C. Perkins, Minister for Transport, Police, Labour and Native Welfare.

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Demography—Western Australia's population estimated to have reached 750,000 in March. Continued decline in crude birth rate, to 22·59 per thousand of mean population. Crude death rate, 7·69 per thousand of mean population, the lowest ever recorded. Estimated increase of population during year, 19,510, the largest annual increase since 1955.

Public Finance—State deficit for year ended 30th June, £0·96 million (expenditure £75·9 million, revenue £74·9 million). Budget for 1962–63 presented 27th September ; estimated deficit £0·78 million (expenditure £78·9 million, revenue £78·2 million). Announcement by Prime Minister on 6th February of Federal Government's financial measures designed to stimulate employment and increase business confidence ; special non-repayable grant of £10 million to the States for employment-giving activities, an additional advance for housing, and an increase in the borrowing programmes of semi-government and local government authorities, representing a total addition of £25 million to the spending resources of the States in 1961–62 ; from 7th February, increase from £2,750 to £3,500 in maximum advance under War Service Homes Scheme ; rebate of five per cent. of tax on income of individuals for 1961–62 ; investment allowance, in the form of deduction from assessable income for taxation purposes, equal to 20 per cent. of expenditure on new manufacturing plant and equipment installed after 7th February ; from 7th February, sales tax reduced from 30 per cent. to 22½ per cent. on motor cars and station wagons, and from 16⅔ per cent. to 12½ per cent. on commercial vehicles, motor cycles and motor vehicle parts and accessories ; increases in unemployment and sickness benefits from 1st March, 7s. 6d. per week for an adult or married minor and for dependent spouse, and 2s. 6d. per week for first or only child, and introduction from that date of benefit, at the rate of 15s. per week, for each child other than the first.

Private Finance—Personal income for year ended 30th June, £357·4 million (wages, salaries, etc. £228·3 million ; cash benefits from public authorities £32·9 million ; farm income £32·2 million ; income from dwelling rent £12·8 million ; all other income £51·2 million) or £479 per head of mean population. Savings bank deposits at end of June £90·5 million compared with £80·7 million at end of June, 1961, an increase of more than 12 per cent. Bank of Adelaide Savings Bank Limited and National Bank Savings Bank Limited commenced business 31st May, and Commercial Savings Bank of Australia Limited 2nd July ; from that date all trading banks in Western Australia conducting savings bank business. From 13th April rates of interest on fixed deposits with banks reduced by ¼ per cent. From 10th September maximum permissible term of fixed deposits with banks extended from 12 months to 15 months. Abolition from 1st October of inland exchange formerly charged by banks on transfers within Australia, and substitution of fee for service based on number of entries made in the customer's account. Value of retail sales of goods £258·8 million, more than 9 per cent. higher than in 1961. Balances outstanding at 31st December on hire purchase agreements and other instalment credit for retail sales of goods amounted to £51·4 million, an increase of almost 12 per cent. over total amount outstanding at end of previous year.

External Trade—Value of imports for year ended 30th June £172·7 million and of exports £190·8 million, yielding a favourable trading balance of £18·1 million, or £8·65 million less than for previous year. Decline of £5·18 million in oversea imports and £0·13 million in interstate imports, but value of exports less by £11·0 million and £2·92 million respectively. Favourable balance on oversea trading reduced from £104·3 million to £98·4 million, and increase in interstate trade deficit from £77·5 million to £80·3 million. Improvement in average f.o.b. values of greasy wool and of wheat exported during year, wool realizing 59·76 pence per lb. and wheat 14s. 1½d. per bushel compared with 53·94 pence per lb. and 13s. 7d. per bushel in 1960–61. Exports of greasy wool 137 million lb., wheat 73·9 million bushels, frozen crayfish tails 7·95 million lb., and refined petroleum oils and spirits 561 million gallons, the highest ever recorded. Restrictions on export of iron and steel scrap lifted by Federal Government from 29th August. Amendment to Tariff Board Act (Commonwealth) authorizing appointment of special advisory authorities to undertake inquiries and make recommendations where it appears that urgent action may be necessary to protect an Australian industry in relation to imports. From 18th October, elimination of import licensing on all goods except those subject to quantitative restrictions pending receipt of a Tariff Board report on long-term needs.

Transport and Communication—Official ceremony 5th November at site in Avon valley, 21 miles from Perth, to mark commencement of construction of standard gauge railway to link Kwinana and Kalgoorlie. Preliminary work begun in December on construction of Kwinana-Mundijong-Jarrahdale railway between bauxite deposits in Darling Range and alumina refinery at Kwinana. Continued improvement in Western Australian Government Railways finances ; for year ended 30th June operating

revenues exceeded operating expenses by more than £2 million, and deficit (including depreciation and interest charges) amounted to £2·41 million compared with £3·25 million in 1960–61 and £4·40 million in 1959–60. Completion 29th April of Metropolitan (Perth) Passenger Transport Trust's acquisition of metropolitan road passenger transport services and ferry services. Under a further Western Australia Grant (Beef Cattle Roads) Act, Commonwealth assistance for improvement of roads in Kimberley for transport of beef cattle extended to provide a total of £3·45 million during the five-year period ending 30th June, 1966, subject to expenditure by State Government of the same amount on such projects during this period. Registrations of new motor vehicles (including motor cycles) 28,861, the highest ever recorded and more than 44 per cent. greater than in 1961. Second stage of oversea passenger terminal at Port of Fremantle officially opened in May. Arrival at Fremantle 29th November of m.v. *Kangaroo*, new passenger-freighter built at Brisbane (Queensland) for State Shipping Service ; departure from Fremantle 8th December on first voyage to Darwin (Northern Territory) via north-west and northern ports. Report presented to Parliament in October, after inquiry into operations of State Shipping Service, recommended increases in freight rates and passenger fares and the appointment of a Commission of three members to control the Service ; increased charges operative from 1st November. Commonwealth financial assistance for construction of a new jetty at Derby provided by Derby Jetty Agreement Act (Commonwealth), and reclamation work begun late in year. Official opening 13th October of new passenger terminal at Perth Airport. New 12-channel telephone system commenced operating between Perth and Melbourne (Victoria) in October. Commencement of work on coaxial cable system between Perth and Bunbury to provide improved telephone service and a television relay channel. Reception by satellite-tracking station at Muchea of report while in orbit 20th February from Lieutenant-Colonel John Glenn (United States Marine Corps) of sighting of lights of Perth and other places in Western Australia in course of first manned orbital flight in United States Government's Project Mercury ; other similar flights over Western Australia 24th May and 3rd October. Carnarvon selected by survey team from United States of America as possible site for establishment of a second satellite-tracking station in Western Australia. Announcement in May of agreement between Australian and United States Governments for construction of a naval radio communications station at North West Cape. Television viewers' licences at 31st December numbered 92,017, an increase of 14,407 since end of 1961.

Rural Industry—Opening of cereal-growing season with heavy rains in all districts during last week in May. Rainfall in June was average, adequate in July, below average in August and September, but widespread falls occurred in the first half of October. Wheat harvest 72·5 million bushels, the largest ever recorded. Wool production 184·1 million lb., lower than in two previous seasons. Applicants selected in August to develop five farms, each of approximately 650 acres, the first farms released to the public in the Ord River Irrigation Project. Presentation to Commonwealth Parliament 7th March of report of Wool Marketing Committee of Enquiry recommending continuance of auction system and establishment of an Australian Wool Commission to control marketing, promotion and research ; rejection of proposals for a reserve price scheme to provide a minimum price for woolgrowers. Wool Industry Act passed by Commonwealth Parliament in December constituting an Australian Wool Board to carry out the functions of the existing Australian Wool Bureau, Wool Research Committee and Australian Wool Testing Authority. Honey Industry Act passed by Commonwealth Parliament establishing an Australian Honey Board with powers to engage in promotional and research activities and to control exports of honey ; associated legislation passed to impose a levy of ½d. per lb. on honey production. Following expiration in July of the International Wheat Agreement 1959, a new Agreement signed to cover the three-year period ending 31st July, 1965.

Fisheries—Significant increase in fish production for year ended 30th June ; total take of fish 31·4 million lb. (of which crayfish accounted for 19·2 million lb.), compared with 28·3 million lb. (including crayfish 18·0 million lb.) in 1960–61. Conclusion of survey of tuna resources in southern waters ; investigation showed that resources inadequate to support commercial fishery. New prawn fishing enterprise in Shark Bay area began operations in May.

Mining—Amendment to Gold-Mining Industry Assistance Act (Commonwealth) extending the period of operation of the Act for a further three years ; Gold Mines Development Assistance Act passed by Commonwealth Parliament to provide for payment of a development allowance to approved producers not receiving subsidy under the Gold-Mining Industry Assistance Act. Production of iron ore 1,403,752 tons, the highest ever recorded. Agreement signed in February between State Government and three joint tenderers, granting 21-year lease, with right of renewal, to mine and export iron ore from

deposits at Mount Goldsworthy ; ratifying legislation passed by State Parliament later in year. In March, temporary prospecting reserves covering more than 3,000 square miles in the South-West granted to a company to search for bauxite. Aerial reconnaissance survey covering about 160,000 square miles begun in Canning Basin in November in connexion with continued search for oil.

Secondary Industry—Average employment in factories during year ended 30th June 51,033 persons, the highest ever recorded. Announcement in October by BP Refinery (Kwinana) Limited of decision to add a propane de-asphalting plant to its lubricating oil refinery being built at Kwinana. New beef treatment plant opened at Robb Jetty in January and new abattoir and meat treatment works at Derby in June. Following favourable reports by a French research organization and engineers of the Public Works Department, announcement in December of State Government's plans for a more detailed exploratory survey of Collier Bay area in West Kimberley as the possible site of a generating station to produce electric power from tidal sources. Approval by State Government of long-range plan to supply electricity through the State Electricity Commission to areas as far north as Northampton. Value of all new buildings completed, £41·99 million, the highest ever recorded and more than 27 per cent. greater than in 1961.

Water Supplies—Meeting of Federal and State Ministers in Canberra in July recommended establishment of a Water Resources Council to co-ordinate existing research on Australia's water resources, and to plan future research to produce a comprehensive assessment of water available from all sources. Ballidu connected to Comprehensive Water Supply Scheme in November and Dalwallinu in December. Tender accepted by State Government in July for installation at Rottnest Island of desalination plant with planned output of 8,500 gallons of fresh water daily.

Health—Important development in treatment of mental disorders with passage of Mental Health Act, providing a single uniform law in place of previous Acts. New building for Perth Dental Hospital officially opened in March. New regional hospital opened at Albany in March and fully air-conditioned hospital opened at Port Hedland in August. From 1st January, Australian Branch of the British Medical Association reconstituted as the Australian Medical Association.

Education—Thirty-two students successful at final examinations for degrees of Bachelor of Medicine and Bachelor of Surgery, the first to complete the full six-year course at the University of Western Australia. Programme of University building continued ; work begun in August on new library ; new buildings opened in March for Chemistry Department and in April for Physics Department. Ceremony 10th June to mark laying of foundation stone of Kingswood College, a residential college established at the University by the Methodist Church. Announcement in July of increase in University student fees, to operate from beginning of 1963 academic year. From 1st April, liberalization of conditions and increased allowances payable to approved University and Technical College students under Commonwealth Scholarships Scheme. Announcement in October of new training plan to supplement existing five-year apprenticeship for certain building industry tradesmen ; selected youths to serve apprenticeship of only three years in carpentry and bricklaying, as government employees, after one year's technical training before being apprenticed. Announcement in December of increased tuition fees payable at government technical education institutions from beginning of 1963 academic year, and introduction of fees for students under 18 years of age, previously given free instruction. Education Act amended to extend period of compulsory school attendance to end of school year in which the scholar attains the age of fourteen years instead of, as formerly, terminating on the fourteenth birthday. Third School of the Air established, at Kalgoorlie, to supplement correspondence tuition provided by the Education Department. In December the book stock of the Library Board reached a total of half a million.

Prices, Wages and Employment—Consumer Price Index for Perth 121·8, the same as for 1961. State basic wage rates unaltered during year, the first year since 1954 in which no variation occurred ; Commonwealth basic wage rates also unchanged. Average weekly earnings per employed male unit for year ended 30th June £21·27 compared with £20·57 in 1960–61. Average number of wage and salary earners in civilian employment (excluding rural industry and female private domestics) 208,300, an increase of 7,200 over number in previous year. Average number of persons receiving unemployment benefit during year 2,562 compared with 2,879 in previous year. Five-day working week for employees in the baking industry in the metropolitan area operative from 21st November. Twenty-eight industrial disputes involving 8,363 workers resulted in a loss of 6,300 working days and an estimated loss in wages of £25,000.

Legislation and Administration—General elections for Legislative Assembly on 31st March and biennial elections for Legislative Council on 12th May resulted in a continued majority in both Houses for Liberal-Country Party coalition government.

Parliamentary session opened 26th July, ended 15th November. Legislation included the Agricultural Products Act Amendment Act constituting an Apple Sales Advisory Committee to investigate production and marketing of apples ; the Business Names Act consolidating and amending the law relating to business names and providing that a resident agent must be appointed where persons in respect of whom a business name is registered reside outside the State or have no fixed address within the State ; the Charitable Trusts Act permitting property given or held in trust for a specific charitable purpose to be disposed of, in certain circumstances, for a charitable purpose other than that originally intended, and making provision for proper supervision of trusts by the Attorney-General and the Supreme Court ; the Child Welfare Act Amendment Act appointing the Director of Child Welfare to be guardian of all wards of the State, authorizing the Minister to commit to the care of the Department a child left without parent, near relative or guardian, and increasing from £2 10s. to £5 per week the maximum amount to be paid by near relatives for the maintenance of a child ; the Companies Act Amendment Act providing for company charges or assignments previously registered under the Bills of Sale Act to be re-registered, on the appropriate renewal dates, under the Companies Act and permitting in the case of a life insurance company the use of the share premium account in the building up of the statutory reserve required to be maintained by Commonwealth law ; the Constitution Acts Amendment Act (No. 2) eliminating the requirement of a five-year period of residence after naturalization in order to qualify for election to the Legislative Council or the Legislative Assembly, adding the condition that before a person may be elected to either House he must be either an elector or qualified to be an elector of the Legislative Assembly, and deleting the proviso disqualifying an aboriginal native who is not the holder of a Certificate of Citizenship from being enrolled as an elector of the Legislative Council ; the Declarations and Attestations Act Amendment Act authorizing a Justice of the Peace appointed for any part of Australia outside Western Australia to attest any instrument or statutory declaration required for use in this State ; the Education Act Amendment Act extending the period of compulsory school attendance to the end of the school year in which the scholar attains the age of fourteen years ; the Electoral Act Amendment Act deleting the provision disqualifying an aboriginal native who is not the holder of a Certificate of Citizenship from being enrolled as an elector of the Legislative Assembly ; the Farmers' Debts Adjustment Act (Revival and Continuance) Act reviving the Farmers' Debts Adjustment Act, 1930–1956 which expired 31st March, 1962, and continuing its operation for five years from that date ; the Fisheries Act Amendment Act prescribing increased penalties for breaches of the Act and enabling the limitation of the number of crayfish pots which may be used by any fishing boat ; the Health Act Amendment Act regulating the equipment and maintenance of public swimming pools, and authorizing a medical practitioner to perform a blood transfusion on a child, to preserve life, without first having the consent of the legal guardian ; the Iron Ore (Mount Goldsworthy) Agreement Act approving an agreement between the Government and three joint venturers comprising Consolidated Gold Fields (Australia) Pty. Limited, Cyprus Mines Corporation and Utah Construction & Mining Co., for the development of iron-ore deposits at Mount Goldsworthy and the export of not less than 15 million tons of iron ore ; the Iron Ore (Tallering Peak) Agreement Act Amendment Act approving a supplementary agreement between the Government and Western Mining Corporation Limited granting additional mining leases in the Koolanooka Hills area ; the Land Act Amendment Act providing that, while in general no person may acquire by conditional purchase more than 5,000 acres of land, the permissible area may, on the recommendation of the Minister and with the approval of the Governor, be increased up to a maximum of 10,000 acres to enable the holding to become an economic farm unit ; the Licensing Act Amendment Act revising the basis of assessment of liquor licence fees ; the Mental Health Act consolidating and amending the law relating to mental health and the treatment of mental disorders ; the Motor Vehicle (Third Party Insurance Surcharge) Act imposing a surcharge at the rate of £1 per year on premiums paid in respect of policies of insurance with The Motor Vehicle Insurance Trust ; the Mount Goldsworthy-Ord Ranges-Depuch Island Railway Act authorizing construction of railways necessary for the mining and export of iron ore from deposits in the Mount Goldsworthy area ; the Pharmacy and Poisons Act Amendment Act replacing the apprenticeship system of training for pharmaceutical chemists by a new system requiring both academic and practical training ; the Stamp Act Amendment Act (No. 2) abolishing duty previously payable on receipts for amounts of £1 or more but less than £5, and increasing to 3d. the duty payable on receipts for amounts of £5 or more but less than £50, imposing higher rates

of duty on transfers on sale of property and on hire purchase agreements and simplifying the method of calculation of duty on insurance policies ; the Town Planning and Development Act Amendment Act extending interim development order provisions to 31st December, 1963 ; the Trustees Act consolidating and amending the law relating to trustees ; the War Service Land Settlement Scheme Act Amendment Act empowering the Minister to approve the sale of land granted under the Scheme without requiring that all debts to the Crown be first paid ; and the Western Australian Marine Act Amendment Act authorizing the making of regulations for the registration of pleasure boats and empowering the Minister to grant by licence the right to the exclusive use of a particular area of water for mooring purposes. Among Bills introduced but not passed were the Bush Fires Act Amendment Bill proposing to increase membership of the Bush Fires Board and to give effect to other recommendations of the Royal Commission on Bush Fires ; the Death Penalty Abolition Bill seeking to suspend the death penalty for a trial period of five years ; the National Trust of Australia (W.A.) Bill aiming to establish and incorporate as a statutory authority the National Trust of Australia (W.A.) ; the Native Flora Protection Act Amendment Bill designed to provide measures for the greater protection of wildflowers and native plants ; and the Noxious Weeds Act Amendment Bill seeking to amend the basis of assessment of the noxious weeds rate.

Companies Act, 1961 (State) operative from 5th October.

Parliamentary Allowances Act and Members of Parliament, Reimbursement of Expenses, Act amended to provide increases operative from 1st January, 1963 ; for private members generally annual allowance raised from £2,220 to £2,500 and expenses reimbursement from £450 to £600 with larger increases applying to certain non-metropolitan members and to Cabinet Ministers and holders of other offices.

Appointment in February of Pastoral Leases Committee to inquire into and report upon conditions in the pastoral areas of the State ; the desirability of amendments to the Land Act in relation to size of leases, rental provisions and conditions of tenure ; and scientific research concerning herds and pastures. Presentation to Parliament in July of findings of committee appointed in December, 1958 to report on prevention of delinquency and associated problems ; recommendations included establishment of a new and separate remand home for short-term care and treatment of disturbed children, and provision of a closed reformatory for girls and a residential corrective institution for boys. Presentation to Parliament in August of report of Royal Commission on buying, presentation and marketing of apples grown in Western Australia.

Appointment in February of first members of Transport Advisory Board established under State Transport Co-ordination Act Amendment Act of 1961. Appointment in March of Mr. O. J. Negus, Q.C. as Judge of the Supreme Court, thus increasing to six the number of Judges in addition to the Chief Justice, as authorized by the Supreme Court Act Amendment Act of 1960. Appointment in October for five-year period of an Administrator for the North-West, with headquarters at Derby, to have responsibility, throughout the area north of 26° S. latitude, for co-ordinating departmental activities, investigating and reporting on local problems and proposals and to act as chairman of divisional consultative councils and as a member of an authority to be established for the planning of future northern development.

Retirement from politics in February of Deputy Premier, Hon. A. F. Watts, M.L.A. for Stirling, after having been a Member of Parliament since 1935 and Leader of the Country Party since 1942. Resignation from Parliament in May and death in December of Hon. Sir Ross McLarty, former M.L.A. for Murray and Premier of Western Australia from 1947 to 1953. Deaths in July of Mr. G. F. Roberts, M.L.A. for Bunbury since 1955 and of Hon. H. L. Roche, M.L.C. from 1940 to 1960.

Amendment to Commonwealth Electoral Act extending to aboriginal natives the right to vote at Federal elections.

Ministerial statement to House of Representatives 22nd February that, under the requirements of the Representation Act and on the basis of population as determined at the 1961 Census, Western Australia, New South Wales and Queensland should each have one member less and Victoria one additional member in a House of Representatives of 120 members (excluding the member for the Northern Territory and the member for the Australian Capital Territory) ; Distribution Commissioners appointed 12th April to consider reallocation of boundaries of Electoral Divisions. Government motion in House of Representatives 29th November for acceptance of Commissioners' recommendations in regard to New

South Wales ; announcement by Prime Minister 4th December that, as a result of opposition encountered in Parliament, the Government would not proceed with its motion, and proposals for other States would not be presented to Parliament.

Ministerial statement to House of Representatives 6th December outlining Federal Government's proposals for measures to prevent harmful monopoly and restrictive trade practices, including persistent price cutting at a loss to force a competitor out of business, collusive tendering and bidding, and acquiring or using monopoly power to prevent a person from entering or expanding a business.

Miscellaneous—January the hottest month on record at Perth ; maximum temperature on 24 days exceeded 90° F. including nine registrations over 100° F., and average maximum temperature for month was 93·9° F.

From 1st March, modification of residential qualifications applying to payment of age and invalid pensions ; qualifying period reduced from 20 years to 10 years for age pensions, and also for invalid pensions in cases where the incapacity or blindness first occurred outside Australia.

Field work begun in May on largest single mapping project ever undertaken by Department of Lands and Surveys, to cover an area of approximately 77,000 square miles extending from near Laverton to the South Australian border.

Official opening 18th July at Darwin (Northern Territory) of " Western Australia House ", a building acquired by the State Government to provide office accommodation for State Shipping Service and Tourist Bureau.

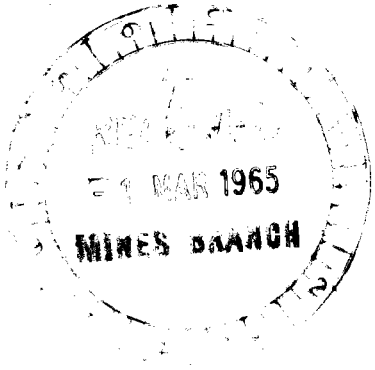
Official opening 30th July of Perth's tallest building, the T. & G. Building, 225 feet in height.

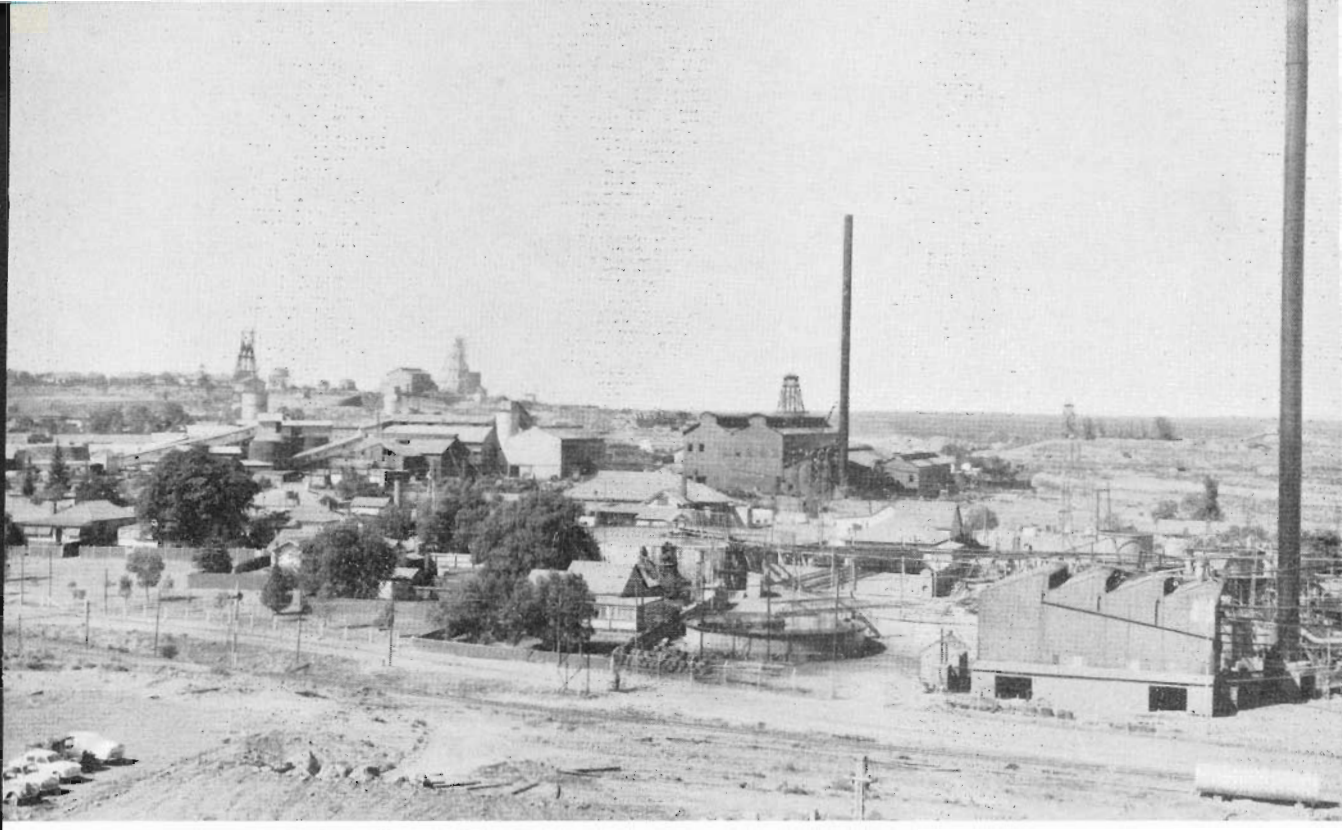
Historical museum at the old Toodyay gaol officially opened 7th October.

Announcement in February of plan to establish a Botanic Garden in King's Park ; allocation by State Government of sum of £166,500 to be spent over a five-year period commencing with the financial year 1962–63.

Visit in September of Their Majesties King Bhumibol and Queen Sirikit of Thailand, the first visit by a reigning monarch of a foreign country.

Visit between 21st November and 2nd December of His Royal Highness the Duke of Edinburgh to open and attend the VII British Empire and Commonwealth Games held at Perth from 22nd November to 1st December.





PART OF THE GOLDEN MILE, KALGOORLIE

The Golden Mile is the most productive goldfield in Australia



CHAPTER II—PHYSICAL FEATURES, CLIMATE, FLORA AND FAUNA

PART 1—PHYSICAL FEATURES AND GEOLOGY

Contributed by

Rex T. Prider, B.Sc., Ph.D., F.G.S., M.Aust.I.M.M.

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The development of any country depends on its natural resources and the industry of its people, and there can be few more important investigations for any country than those dealing with the productive capacity of its territory. Natural resources—be they power, mineral, or soil resources—are dependent entirely on the climate, physical features and geology. Looking at the pattern of development of Western Australia we see that for nearly seventy years after the foundation of the Swan River Colony in 1829 agricultural production barely kept pace with the requirements of the small population. The discovery of gold in the 1890's, however, led to a period of rapid expansion, and Western Australia became one of the major gold-producing areas of the world, and with this increase in mining production there was a corresponding expansion of the agricultural and pastoral industries. We are now experiencing an expansion of our secondary industries. In each of these phases of development we can, if we look closely, see the dominating influence of the geological environment.

The nature of the rocks underlying any region is one of the major factors controlling topography, soil, and mineral resources. The latter is self-evident. The soil, on which we are so dependent, was formed by the weathering of the underlying rocks and many of its characters are due to the parent rock material. In recent years much research has been carried out into trace element deficiencies in soils, with astounding results as far as land utilization is concerned. At first sight it would seem fantastic to think of the underlying rocks being in any way responsible for malnutrition of stock, but when it is demonstrated that the malnutrition is due to the lack of some minor element in the fodder which is due to its deficiency in the soil, a deficiency which, in its turn, is due to the absence or relative absence of such elements from the parent rocks from which the soil was derived, the significance of the geological environment becomes evident. Topography which is important in connexion with land utilization, water conservation, power (hydro-electric) resources, and in affecting climate, soil erosion, coastal erosion, transport routes, harbours, and so on, is also dependent to a great extent on the nature and structure of the underlying rocks.

It is appropriate therefore that we should consider here the physical features and geology of Western Australia since they, together with the climate, are the primary controls of our soil, mineral, water and power resources, on which our existence and future development are entirely dependent.

PHYSICAL FEATURES

In the broadest way this State can be divided into two physical regions: (i) a tableland (the *Great Plateau*) in various stages of dissection occupying the whole of the interior of the State, (ii) a low-lying narrow strip (the *Coastal Plains*) running almost continuously along the coast from near Albany to Broome. A third physical region, the *Scarplands*, separating the Coastal Plains from the Great Plateau, may be distinguished. This, although only a narrow belt, is a significant one in the southern part of the State because of its importance in connexion with the water conservation schemes on which the metropolitan area, the major goldmining field in the vicinity of Kalgoorlie, the intervening agricultural and pastoral districts, the irrigation areas on the coastal plains south of Perth, and more recently the wheat belt along the Great Southern Railway, are dependent.

The Great Plateau

The Great Plateau which occupies more than 90 per cent. of the area of the State varies considerably in elevation. In its highest parts (in the North-West) it attains a height of approximately 4,000 feet above sea-level. The greater part is, however, below the 2,000-ft. contour and its average elevation is of the order of 1,000 to 1,500 feet above sea-level. Although there is this considerable variation in level the changes are so gradual that the plateau character of the country is not obscured and for the most part it may be regarded as having a vast gently undulating surface. Occasional hills (monadnocks, which are remnants of a previous cycle of erosion) rise above the general surface of the plateau.

The Great Plateau may be conveniently subdivided into an area of exterior drainage (where there are definite rivers which flow to the sea), an area of interior drainage (where such water as flows passes into inland basins), and two areas of no surface drainage but which, if they had drainage, would belong to the exterior drainage system. The area of exterior drainage can be marked out by connecting the source of the streams which flow to the sea and if this is done it will be seen that the width of the exterior drainage belt varies considerably. Thus in the Kimberley and North-West Divisions some of the rivers are hundreds of miles long, but in the south-west part of the State many of them are comparatively short. The areas of no surface drainage are in the north North-West along the Eighty Mile Beach from the mouth of the De Grey River to the north of Broome, and on the Nullarbor Plain in the south-eastern corner of the State. The remainder of the country forms the interior drainage area.

In the area of exterior drainage the dominant feature of the extreme south-west and the northern part of the plateau is a reticulate pattern of rather deeply-incised watercourses. In the southern part of the State these deeply-incised watercourses where they pass from the plateau to the coastal plains are of great significance (as has already been mentioned) in connexion with water supply schemes. Elsewhere in the State the marginal portion of the Plateau is drained by rivers that flow to the sea only at times of exceptional rainfall and, speaking in the most general way, have courses at right angles to the coast.

The area of interior drainage is arid and practically riverless. Small creeks run from the higher parts of the country but they either disappear on the extensive flats or reach the shallow basins which are termed salt or " dry" lakes, the term " dry " being used since these so-called lakes are free from water except after fairly heavy or long-continued rain. These " lakes " are generally elongated, narrow, and often winding salt-encrusted flats arranged in long, more or less connected streams. After heavy rain they are covered with a thin layer of water and, after unusually heavy rain, water has been known to flow southwards from one to another of the " lakes " of a string, except towards the western margin of the plateau where the drainage is to the west. It is evident that these elongated " lakes " are the remnants of an old river system developed during a more humid period. The salt lakes are of some economic significance since, on the evaporation of the water, common salt and other substances such as gypsum are deposited on the floor of the lake. The gypsum, which crystallizes earlier than the common salt, is generally blown from the damp surface of the dried-up lake and deposited as dunes of " seed gypsum " on the leeward (eastern) side of the lake. These dunes are utilized, for example at Lake Seabrook north of Yellowdine, as a source of gypsum for plasters. Common salt, which separates later, forms a crust on the floor of the lake when it has been completely dried up and such salt deposits are exploited, for example at Lake Lefroy near Widgiemooltha. In a few of the Western Australian salt lakes significant deposits of alunitic clay have been discovered which have been worked as a source of potash.

Over a large portion of the interior drainage part of the Great Plateau there are extensive sandplain soils overlying a hard laterite (" ironstone ") layer, which is of the order of up to fifteen feet in thickness, below which lies an intensely weathered zone from which most of the nutrient elements so important for plant growth have been leached. These more recent geological formations will be discussed in the section of this Part dealing with geology, but we may note here the significance of this lateritic profile (sandy soils near the surface, " ironstone " a few feet below, and completely kaolinized rocks still deeper) so far as soil fertility is concerned. This lateritic profile is the result of long-continued weathering processes which have resulted in almost complete leaching of the valuable nutrients and as a result soils developed in any part of this profile are generally very poor in character. It is only where erosion has cut through the lateritic profile and still younger soils have been formed by weathering of the underlying rocks that the better soils are found. As has been mentioned, however, with recent studies of trace element deficiencies much can be done with these " light " soils by the addition of suitable nutrients.

The areas of no surface drainage include the Eucla Division and portions of the Eastern Division of the State. This area is occupied largely by horizontal or nearly horizontal limestones of the Nullarbor Plain and the drainage here is sub-surface in character through subterranean streams and caverns in the limestone. The Nullarbor Plain is an extensive monotonously level plain standing at a height of about 600 feet above sea-level. The Western Australian part of the Nullarbor Plain is bordered to the south by a narrow coastal plain but further east, at the head of the Great Australian Bight, in South Australia, this coastal plain is absent and the southern edge of the Plain is truncated by cliffs which rise almost sheer for 200 to 400 feet above sea-level.

The hills of the Great Plateau are of two kinds, ridged and table-topped. In the southern half of the State the ridged hills, a few of which rise as much as 1,500 feet above their surroundings, are generally elongated in a north-north-west direction, reflecting in their trend the structure of the underlying rocks. The table-topped hills are seldom more than 200 feet above the general level. They are capped with a subhorizontal layer of laterite (" ironstone ") and bounded by low cliffs, in many places undercut, which are known in Western Australia as " breakaways." The table-topped hills are relicts of erosion of a former laterite-covered peneplain (the *Darling Peneplain*) which was uplifted in Pliocene times to form the Darling Plateau and has subsequently been subjected to erosion under semi-arid conditions. The ridged hills on the other hand are elongated monadnocks which, being cored by resistant rocks such as jasper bars, withstood erosion and so rise above the general level of the remnants of the laterite-covered Darling Plateau.

The Great Plateau slopes down very gradually to the south and west. The downward slope to the south is interrupted by a narrow broken chain of rugged hills, the Stirling and Mt. Barren Ranges which rise to heights of from 1,000 to 3,600 feet above sea-level. The western margin of the Plateau is, in the south, formed by the " Darling Range " which, being merely the dissected margin of the Plateau, is much better called the *Darling Scarp*. This Darling Scarp is clearly defined between latitudes 31° 30′ S. and 33° 30′ S., *i.e.*, between Moora and Donnybrook, but it is difficult to recognize farther north or south. In the Kimberley Division the mountain ranges are the relicts of erosion between the deeply-incised rivers and in this region the highlands of the plateau terminate abruptly along a steep, deeply-indented coastline.

The Coastal Plains

Bordering the Great Plateau are the Coastal Plains which vary in width. The *Swan Coastal Plain* which extends from the neighbourhood of Perth to near Busselton averages about fifteen miles in width and is divisible into the following belts : a narrow band of moving sand dunes along the coast ; a zone averaging three or four miles in width of sandy limestone which rises in places to heights of 100 to 200 feet above sea-level ; a zone three or four miles wide of loose sand fixed by vegetation ; and, abutting against the Scarp which forms the western margin of the Plateau, a zone of clayey soils of about the same width. A strip of low plain extends along the coast at intervals as far north as King Sound and coastal plains of some width occur near Port Hedland and Exmouth Gulf. A narrow plain fronts the cliffs of the Great Australian Bight for some distance and also occurs in other places along the south coast.

The coastline of Western Australia, some 4,350 miles in length, is broken by capes between Wyndham and Broome, between Port Hedland and Shark Bay, and between Cape Naturaliste and Israelite Bay. The intervening parts are comparatively featureless.

It has only been possible here to briefly outline the principal physical features of Western Australia and for a fuller description of the physiography of this State the reader should consult J. T. Jutson's " Physiography (Geomorphology) of Western Australia " (*Geol. Surv. West. Aust. Bull.* 95).

GEOLOGY

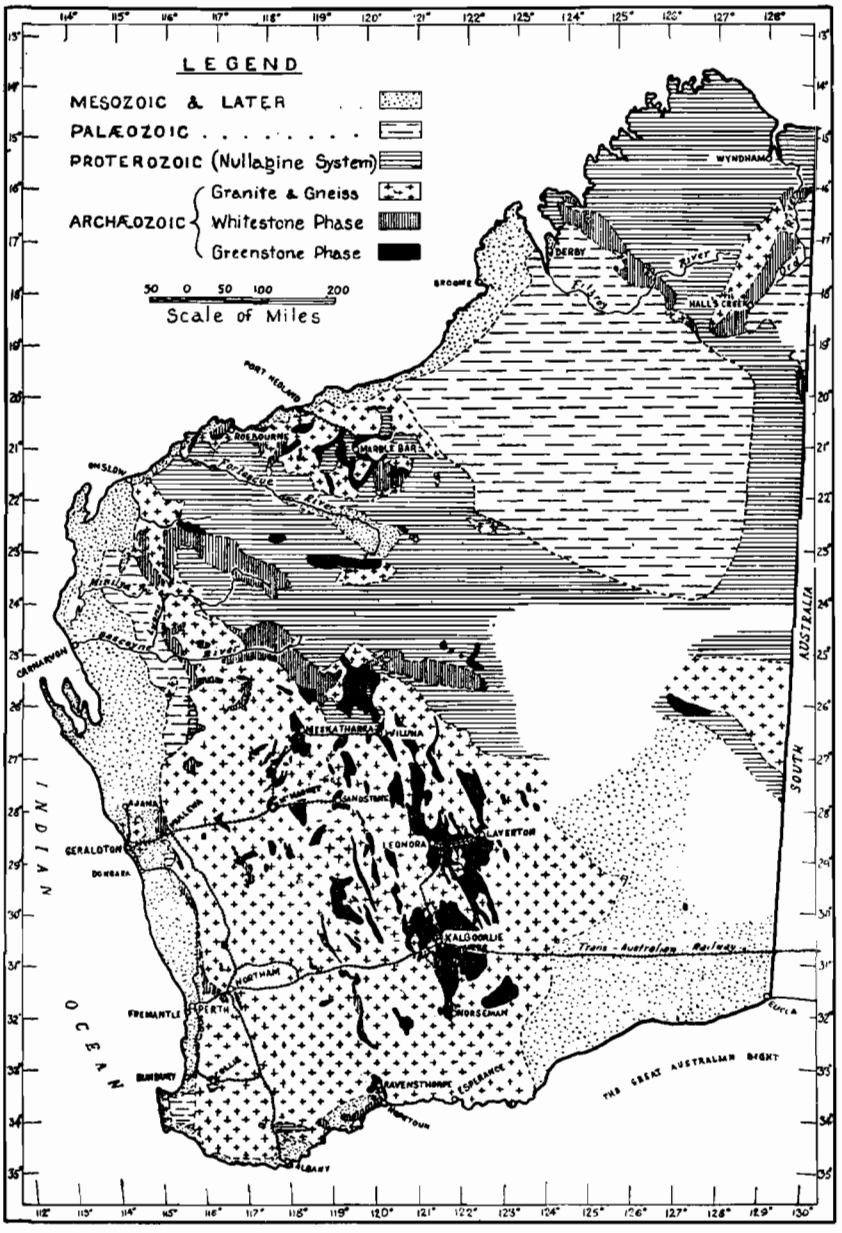
More than two-thirds of Western Australia is occupied by the ancient Australian Precambrian shield which is composed of a complex of igneous, metamorphic and sedimentary rocks formed more than 600 million years ago. Most of our mineral deposits of economic importance, except coal and water and superficial deposits such as bauxitic laterite, black sand and other alluvial deposits, occur in these Precambrian rocks. The remainder of the State is occupied by sedimentary basins in which Palaeozoic and later sediments are developed. It is in these younger sedimentary basins that artesian water, coal and oil are likely to occur. Finally there are the still younger superficial deposits—laterites, salt-lake deposits, and soils on which much of the economy of this country depends. It will be convenient therefore, in outlining the geology of the State, to consider it under the three main headings :—

(*a*) The Precambrian basement.
(*b*) The sedimentary basins.
(*c*) The superficial deposits.

The distribution of the solid rocks (omitting superficial deposits) is shown in the accompanying map.

The Precambrian Basement

This includes the Archaean and Proterozoic rocks. The Archaean is a complex of crystalline igneous and metamorphic rocks, dominantly granites and gneisses with minor amounts of basic igneous and



GEOLOGICAL MAP OF WESTERN AUSTRALIA

(from Clarke, Prider and Teichert, "Elements of Geology for Western Australian Students." by courtesy of University of Western Australia Press.)

schistose metasedimentary formations. In places, particularly in the North-West and Kimberley Divisions, this Archaean complex is overlain unconformably by sedimentary and volcanic rocks of Proterozoic age which do not exhibit the extensive metamorphism so characteristic of the older Archaean complex. Within the different areas occupied by the Precambrian rocks the same generalized sequence can be distinguished.

In the Kimberley the oldest rocks are metamorphosed igneous and sedimentary rocks intruded by granite and carrying in places auriferous ore deposits, and these are overlain by un-metamorphosed sediments with basic igneous intrusives. The Precambrian age of all these rocks is evidenced by the fact that in the East Kimberley they are overlain by sedimentary rocks containing fossils of Cambrian age. This is the only area in Western Australia where the Precambrian age of the rocks of this crystalline complex can definitely be proved on stratigraphical evidence alone. In the southern part of the State we find a similar sequence of crystalline schists with intrusive granites and by lithological correlation (which is not a very sound method) we assume that they are Precambrian although they cannot actually be traced through from the Kimberley. We do know that in the Carnarvon Basin these gneisses, schists and granites are older than the Devonian, which unconformably overlies them, and in the Perth Basin they are older than the Permian. During recent years the Precambrian age of these rocks has been confirmed by actual age determinations based on the decay of radioactive elements which occur in them. This work indicates that the granitic intrusions of the southern part of the State crystallized from a molten state some 2,700 million years ago.

The Precambrian sequence in the North-West Division appears to be the most complete that is present in Western Australia and, from oldest to youngest, is as follows :—

The *Warrawoona System*, which consists mainly of greenstones and green schists which were, prior to the intense folding and metamorphism to which they were subjected after deposition, basaltic lavas and tuffs with interbedded chemically deposited secondary rocks (ferruginous cherts) in the upper part of the sequence. The Warrawoona System is unconformably overlain by a System (the *Mosquito Creek System*) of sedimentary rocks which have also been intensely folded and metamorphosed to various types of platy-structured schists, slates and quartzites. Both the Warrawoona and Mosquito Creek Systems are invaded by granitic igneous rocks and both carry auriferous ore-bodies. A still younger System (the *Nullagine System*, of Upper Proterozoic age) consisting of sedimentary rocks such as conglomerates, sandstones and shales, with interbedded basic igneous rocks, was deposited unconformably on the highly-folded, granite-intruded Mosquito Creek and Warrawoona Systems. The rocks of the Nullagine System have not suffered the intense folding that affected the older rocks and consequently are present as flat-dipping to horizontally bedded un-metamorphosed sediments. Such sediments cover very extensive areas in the North-West (*see* Geological Map of Western Australia on page 36) and they are similar in all respects to the flat-dipping Upper Proterozoic sediments which cover the plateau country of the North Kimberley. The final episode in the Precambrian history of the North-West was the intrusion of dolerite dykes and sills into all of the earlier rocks.

Coming to the southern half of the State we find a similar sequence to that in the North-West. In the part of the Precambrian shield extending south of latitude 26° S. the oldest rocks that are recognized are the greenstones of the various goldmining fields which occur in comparatively narrow belts elongated in a general N.N.W. direction (*see* Map, page 36). These greenstones, which are for the most part metamorphosed basaltic lavas, are overlain by metamorphosed sedimentary rocks (generally referred to as whitestones). This System of rocks is the *Kalgoorlie-Yilgarn System*. From the mining point of view it is the most important System in the State, since the auriferous ore deposits of the main mining fields are confined to it. It appears to be the equivalent of the Warrawoona System of the North-West. After the formation of the Kalgoorlie-Yilgarn rocks they were intensely compressed into tightly closed folds with N.N.W.-trending axes. During this period of intense earth-movement alkaline solutions permeated the older rocks, converting them into granitic gneisses which occupy the bulk of this southern half of Western Australia. Subsequently granite magma was intruded as in the North-West. This completes the Archaean sequence. The Proterozoic is represented by a narrow strip of slightly altered sedimentary rocks along the Darling Scarp and the rocks of the east-west Stirling and Mt. Barren Ranges along the south coast. As in the North-West all of these Precambrian rocks are intruded by dolerite dykes.

Putting together the information available throughout the State, we conclude that the oldest system of rocks found in Western Australia belongs to the older part of the Archaeozoic Era. It is a great succession of rocks, generally much metamorphosed, which is called the Kalgoorlie-Yilgarn System in the southern part of the State and the Warrawoona System in the North-West region. In the early part

of Kalgoorlie-Yilgarn times there was much volcanic activity which took the form of eruptions of basic and intermediate lavas, tuffs, and breccias. These were penetrated, shortly after their extrusion, by intrusions from the same magma; similar events must be occurring now in the interior of great volcanic masses like Etna or Hawaii. In later Kalgoorlie-Yilgarn times, the dominant process was sedimentation, so that the earlier volcanic rocks, with the minor associated bands of sediment, became overlain by a great thickness of sandy and clayey sediments. These sediments must have been derived from some land mass composed of rocks of pre-Kalgoorlie-Yilgarn age but this, possibly the oldest of all rock assemblages, has apparently not yet been found in Australia or any other part of the World.

After the accumulation of the Kalgoorlie-Yilgarn System came a period of intense earth-movement during which the rocks were, in most places, closely folded and regionally metamorphosed. The folding was accompanied by widespread granitic intrusions, some of which consolidated into primary gneisses whereas others soaked into the Kalgoorlie-Yilgarn rocks, penetrating them along bedding planes, joints, and other fractures, and so forming hybrid granite-gneisses by granitization.

Where they were not affected by this First Granite Invasion, the volcanic rocks of the Kalgoorlie-Yilgarn System were regionally metamorphosed, in some places very strongly into dark-coloured schists, in others only very slightly. Similarly, the sedimentary rocks of the Kalgoorlie-Yilgarn System, where they have escaped the first granite invasion, *i.e.*, have not been granitized, are in some places but slightly regionally metamorphosed, in others they are converted into various types of schist and quartzite.

The Mosquito Creek System forms part of the older Precambrian in the North-West region. It consists mainly of metamorphosed sediments—slates and quartzites largely—and overlies the Warrawoona System unconformably, whereas the whitestone and greenstone phases of the Kalgoorlie-Yilgarn System appear to be conformable to one another. Therefore, there is nothing, it seems, in the southern part of the State to correspond to the Mosquito Creek System.

All the Archaeozoic rocks described above were invaded by the " Younger " Granite, which, unlike the " Older " Granite, formed well-defined intrusions many of which are stocks, though smaller offshoots from the same magma, in the form of " porphyry dykes," occur at nearly every mining centre. These events occurred after the folding but before Proterozoic times. Any of the Archaeozoic rocks in Western Australia may contain ore-bodies yielding gold and other minerals of economic value. It seems likely that these ore-deposits were formed at the time of the Second Granite Invasion which, from radioactive age determination studies, occurred about 2,700 million years ago. Important iron-ore deposits occur in the Archaeozoic rocks at many localities, the best known being those at Cockatoo and Koolan Islands in Yampi Sound which have been exploited for many years. Other large iron-ore deposits are at Mt. Goldsworthy in the Pilbara, Tallering Peak in the Yalgoo Goldfield, and Koolyanobbing, Bungalbin and many other localities in the North Yilgarn. These are all banded ironstone deposits which are interbedded with the basaltic lavas and sedimentary rocks of early Archaean age. In many places there are important manganese deposits associated with these banded iron formations.

Finally, in late Proterozoic (Nullagine) times we had the deposition, under shallow-water conditions, of sandstones, shales and conglomerates and another period of volcanic activity yielding basaltic lava flows. These rocks of the Nullagine System have not suffered the intense earth movements which affected the older rocks, and so are practically un-metamorphosed. Important blue asbestos deposits in these Upper Proterozoic rocks are exploited at Wittenoom Gorge in the Hamersley Range of the West Pilbara. The deposits occur in banded ironstone formations which also contain large iron-ore deposits. Although the rocks of the Nullagine System cover extensive areas in the northern parts of the State they have largely been stripped off the southern half by erosion. The final episode in the Precambrian history of this State was the widespread intrusion of dolerite dykes approximately 550 million years ago.

The Sedimentary Basins

There are five major sedimentary basins in Western Australia—the *Bonaparte Gulf Basin* in the north-east part of the Kimberley Division extending into the Northern Territory, the *Canning Basin* of the West Kimberley, the *Carnarvon Basin* of the North-West, the *Perth Basin* extending from lat. 29°S. to lat. 33°S. and the *Eucla Basin* occupied by the Nullarbor Plain. In addition to these major basins there are smaller basins such as that at Collie and scattered areas where sediments, which are dominantly lacustrine in nature, have been deposited. In these sedimentary areas we find sediments ranging from Lower Palaeozoic to Pleistocene in age. These sediments of Palaeozoic and later age are, as a rule, less disturbed than those of Precambrian times and many are abundantly fossiliferous. There-

fore, there is a sure means of correlating formations even in widely separated places, and so our knowledge of the history of these sedimentary areas is more detailed than in the much altered, highly folded, unfossiliferous Precambrian rocks of the basement.

Apart from the superficial deposits the economic significance of these basins is confined to their possibilities for the occurrence of artesian water, coal and oil. A prime requisite for the occurrence of artesian and sub-artesian water is the occurrence of interbedded strata of varying porosity and permeability. These conditions are met in a number of the sedimentary basins in Western Australia and the development of the pastoral industry in the arid or semi-arid parts of these basins has been largely dependent on the occurrence of artesian water. In the metropolitan area, artesian bores are an important source of water supplies. Coal deposits are also confined to areas of sedimentary rocks and occur in the Permian rocks of two of the minor basins, viz., the *Collie* and the *Irwin River Basins*, and in the Lower Jurassic sediments of the Perth Basin (at Eneabba, where a seam 100 feet thick has been found at a depth of 6,000 feet in a borehole sunk in search for oil, and as indicated in shallow shot-holes in the Hill River area). Up to the present the coal deposits of the lacustrine Permian beds of the Collie Basin constitute the only power source in Western Australia, since no oil of commercial significance has yet been proved and the gently undulating topography combined with low rainfall make the hydro-electric resources insignificant. So far as oil is concerned the first occurrence of flow oil in Australia was encountered in Rough Range Bore No. 1, in the Carnarvon Basin, late in 1953. This discovery of flow oil has resulted in an increase in the rate of geological exploration of all the major sedimentary basins. The results of extensive geological mapping, geophysical surveys and exploratory drilling have to date been disappointing, but the fact that flow oil does occur indicates the presence of suitable source material and conditions for oil formation and preservation. The possibilities, therefore, of locating commercial oilfields in the Carnarvon, Canning and Perth Basins are by no means exhausted and the search is being actively continued.

A detailed description of the sedimentary formations of different ages, from the Cambrian to the Recent, in the various sedimentary basins has been set down in " The Stratigraphy of Western Australia " (*Journal Geological Society of Australia, volume* 4, *part* 2, *pp.* 1–161, 1958). It is proposed here merely to indicate the main features of the various basins.

The *Bonaparte Gulf Basin*, in the East Kimberley, extends into the Northern Territory. As already mentioned, this is the only basin in Western Australia where rocks of proved Cambrian age are exposed. On Western Australian territory the Cambrian rocks extend as a narrow belt along the interstate border between lat. 16° 15′ S. and lat. 18° 30′ S., reaching westward from the border for 15 to 75 miles. The Cambrian consists of basalts at the base of the sequence, overlain by Middle Cambrian fossiliferous limestones, shales and sandstones. There is a small development of sandstones which are considered to be of Lower Ordovician age, following which there is a big time gap and the next youngest formations are sandstones and limestones of Upper Devonian and Lower Carboniferous age. Upper Carboniferous and Lower Permian formations are absent, the next marine transgression being in the Middle Permian when there was a thick sequence of conglomerates, sandstones, and limestones deposited. The only other sedimentary rocks in this basin are freshwater sediments (siltstones, marls and cherts containing freshwater fossils) of late Tertiary age.

The *Canning Basin* (formerly named the Desert Artesian Basin), in the West Kimberley, extends from the coast between Derby and the De Grey River in a south-easterly direction almost to the 128° meridian (*see* Map, page 36). The north-east or Fitzroy part of this basin contains sediments ranging in age from Ordovician to Triassic and in the larger Canning Desert portion, to the south of the Fitzroy River, the sediments range from Permian to Lower Cretaceous in age. Most of the Canning Desert section of the basin is unexplored but the Fitzroy section is comparatively well known. It was in this area that the early bores seeking oil were first drilled in Western Australia, following the discovery in 1919 of traces of oil in a water bore on Gogo Station.

The oldest Palaeozoic sediments in the Fitzroy portion of the basin are richly fossiliferous limestones of Ordovician age outcropping near Price's Creek. These are overlain by Devonian reef limestones, sandstones and conglomerates, followed by Carboniferous sandy limestones. These in turn are followed by a thick Permian sequence of sandstones (of marine glacial origin deposited from floating ice), fossiliferous calcareous shales and limestones, and in Upper Permian times fossiliferous ferruginous siltstones and sandstones. All of these formations dip gently in a general south-westerly direction towards the centre of the basin but these regional dips are interrupted by local folding. Shale and sandstone beds of Triassic age occur in the Fitzroy section of the basin. The youngest rocks in this

area are igneous intrusions in the form of intrusive sheets, dykes, and volcanic necks which have been found intruding all rocks of the sequence from the Precambrian granitic basement to the youngest sediments (Triassic) present. These igneous rocks, from direct geological evidence, are of post-Triassic age, and radioactive age determinations made in 1959 indicate that they were formed 180 million years ago (*i.e.*, in Jurassic times). This is one of the two areas in the whole of Western Australia where post-Cambrian igneous activity is known.

In the Canning Desert section of the basin the Palaeozoic rocks are not well exposed and the greater part of this portion of the basin (where not obscured by superficial unconsolidated sands) is occupied by Mesozoic sediments ranging in age from Lower Jurassic to Lower Cretaceous. There is no evidence in the entire basin of any marine transgression after Lower Cretaceous times.

The *Carnarvon Basin* (formerly called the North-West Artesian Basin) has been the most intensively studied of the major sedimentary basins in Western Australia. It extends along the west coast from Onslow near the mouth of the Ashburton River as far south as the mouth of the Murchison River (*see* Map, page 36), the maximum width of the basin being 125 miles at the latitude of Carnarvon. In this basin the eastern portion up to 50 miles wide is occupied by a thick sequence of marine Palaeozoic sedimentary rocks ranging in age from Middle Devonian to Upper Middle Permian, all of which have a westerly regional dip. The estimated maximum thicknesses of the Palaeozoic strata are :—

Permian	13,175 feet
Carboniferous	2,510 feet
Devonian	5,120 feet

This Palaeozoic sequence which consists of fossiliferous Devonian limestones and sandstones, Carboniferous limestones and Permian marine glacial beds, limestones, sandstones, and shales, is almost entirely marine in origin. In the Carnarvon Basin we have the only wholly marine Permian sequence in Australia, and without doubt *one of the thickest marine Permian sequences in the World.*

No rocks of Silurian age were known from the western half of the Australian continent until 1957 when a bore sunk by West Australian Petroleum Pty. Ltd. at Dirk Hartogs Island in Shark Bay encountered limestones of Silurian age underlain by sandstones which are now correlated with the reddish sandstones which outcrop in the lower reaches of the Murchison River.

To the west the Permian rocks are unconformably overlain by Cretaceous sandstones, shales, marls and limestones attaining a total thickness of 2,000 feet. It is the basal formation, the *Birdrong Sandstone*, of the Cretaceous sequence that is the oil sand encountered in Rough Range Bore No. 1. The Cretaceous rocks outcrop in a north-south belt averaging 50 miles wide between the Palaeozoic and Precambrian rocks on the east and the Tertiary limestones to the west. The only other Mesozoic formation exposed at the surface in this basin is a Jurassic sandstone 25 feet thick. However, a deep well (Cape Range No. 2) drilled in search of oil at Exmouth Gulf, after passing through the base of the Cretaceous at 3,707 feet, entered the Lower Jurassic which extended to the depth of 15,169 feet at which the bore was discontinued, thus proving a thickness of at least 11,462 feet of Lower Jurassic strata in this area. It is apparent that there is a marked thickening of the Mesozoic formations from east to west in this area. The westernmost belt of the Carnarvon Basin is occupied by Tertiary strata, mainly limestones, which are well exposed in the Rough and Cape Ranges of the Exmouth Gulf area. These limestones, which range from Lower Miocene to Pliocene in age, total 1,200 feet in thickness and are discontinuously overlain by Pleistocene and Recent beds approximately 450 feet thick. Marine Tertiary sediments which are so well developed along the western margin of the basin extend as a thin discontinuous formation unconformably over the Permian beds of the eastern part of the basin, indicating that in Upper Eocene times the sea transgressed practically the whole of the Carnarvon Basin.

The sedimentary rocks of the Carnarvon Basin were affected by earth movements at various times. Even the youngest of the Tertiary rocks have been thrown into gentle folds which are significant so far as the search for oil is concerned because, in addition to having suitable conditions for the formation and preservation of oil, suitable structures are necessary for its concentration into local areas (oil " pools "). So far as structure is concerned, the general picture of the Carnarvon Basin is the gentle westerly regional dip of the Palaeozoic sediments of the eastern half of the basin and the gentle dome and basin folding of the western half.

The *Perth Basin* (formerly called the Coastal Plain Artesian Basin) is a narrow elongated basin on the western border of Western Australia extending from Geraldton in the north to Cape Leeuwin in the south. At Geraldton it is 30 miles wide and is flanked both to the west and east by Precambrian crystalline rocks (mainly gneisses). The maximum width of the basin is approximately 50 miles at

Watheroo and it narrows again to the south being approximately 30 miles wide in the sunkland between Busselton and Augusta. At this southern end it is again flanked both to the east and west by Precambrian rocks. The surface of the basin is mostly covered by Recent sands but occasional outcrops of rocks as old as the Permian occur in places. Little is known regarding the structure, thickness and age of the sediments in the basin. The only evidence available is that provided by geophysical surveys and several deep bores sunk in the search for oil and a number of water bores up to 2,400 feet deep in the metropolitan area. Gravity surveys indicate that there is a very considerable thickness of sediments, perhaps exceeding 30,000 feet, and it is probable that in this basin we have a complete succession from the Younger Proterozoic (*Cardup Group*), along the Darling Scarp, to the Recent sands. Other than the Proterozoic (or maybe early Palaeozoic rocks) of the Darling Scarp, the oldest sediments exposed are the gently folded Permian marine sediments of the *Eradu* and *Irwin River Basins* at the north end of the main basin. The Permian sediments of the Irwin River area have a total thickness of 4,000 feet and vary from marine glacial beds at the base (as in the Carnarvon and Canning Basins) through fossiliferous marine shales and limestones to lacustrine sandy sediments with coal seams in the upper part of the sequence. Marine and continental Jurassic limestones and sandstones occur east of Geraldton and Jurassic beds, overlain by Cretaceous chalks and greensands, occur near Gingin and Dandaragan. In the southern part of the Perth Basin the oldest rocks exposed (if we except the Permian of the separate minor *Collie Basin* which is situated well to the east of the Darling Scarp in a glacially-gouged trough) are the Cretaceous *Donnybrook Sandstones.*

In the vicinity of Perth, artesian bores to a maximum depth of 2,400 feet expose a sequence varying from Jurassic sandstone at depth, through Cretaceous and Eocene shales. The *King's Park Shale* of Eocene (older Tertiary) age is overlain by Pleistocene aeolian sandstones of the *Coastal Limestone Formation,* the base of which is approximately 100 feet below sea-level. There is therefore a big gap in the succession here between the Eocene and Pleistocene. Up to the end of 1962 twelve boreholes had been sunk in the north-central part of the basin in the course of oil search operations. Boreholes near the coast (at Jurien Bay and Beagle Ridge) struck Precambrian crystalline basement rocks at comparatively shallow depths of 3,360 feet and 4,860 feet but further inland penetrated a very thick sedimentary sequence —Eneabba Bore No. 1 bottomed in Lower Triassic sediments at 13,712 feet and Woolmulla No. 1 in Precambrian basement at 9,218 feet.

The only evidence of igneous activity in the Basin is the Cretaceous basalt of the sunkland between Bunbury and Cape Gosselin on the south coast.

Very little is known about the structure of this basin. It is bounded to the east by a large fault or monoclinal fold and the small amount of evidence available seems to indicate that the main structural character is a gentle regional dip to the east.

The *Eucla Basin* occupying the Nullarbor Plain, in the south-eastern corner of the State is occupied at the surface by marine fossiliferous Middle Tertiary (Miocene) limestones which lie on sandstones and shales of probable Cretaceous age, which in turn overlie the Precambrian crystalline rocks. Little is known of the details of the stratigraphy and structure of the Eucla Basin since the beds are very flat-lying and have only been penetrated by water bores in a few places such as Madura near the coast and Loongana on the Trans-Australian Railway. The Madura bore is artesian but bores along the Trans-Australian Railway have only yielded sub-artesian water (*i.e.* the water will rise under pressure only part of the way to the surface). The oil prospects of this basin are poor because of the comparatively small thickness (2,000 feet) of the sediments and the absence of suitable folded structures to form oil traps.

The *Collie Coal Basin*—Of the minor basins and isolated occurrences of post-Cambrian sediments, Collie, since it is the only operating coalfield in Western Australia, is the only one which will be considered here. It is situated approximately 100 miles S.S.E. from Perth, and has an area of about 100 square miles. Actually it is made up of two basins separated by a subsurface granitic ridge. It is composed of sandstones and shales with interbedded coal seams and is surrounded by Precambrian rocks. The coal measures, of Permian age, are of the order of 2,000 feet in thickness of which approximately 130 feet is coal. The actual contact between the Permian coal measures and the Precambrian granitic basement has nowhere been seen at the surface but has been encountered in deep drill holes in various parts of the Basin. Such drill holes reveal that Permian mudstone containing granite pebbles lies on an ice-planed surface of the Precambrian granitic rocks. This suggests that the Collie Basin, formerly considered to be a block of the Permian downfaulted into the Precambrian basement, is actually a glacially-gouged trough formed by terrestrial glaciation in the Permian and since filled with Permian

lacustrine sediments. Coal occurs at three horizons and the seams, which average six feet in thickness, persist over fairly long distances. From the associated plant fossils these coal measures appear to be comparable in age with those of the upper part of the Permian sequence at the Irwin River near the northern end of the Perth Basin.

The Superficial Deposits

Over a great part of the State fresh rock outcrops are comparatively sparse and are covered by highly weathered rocks, laterite, drift sand, soils, and, in the salt lake country, by thin evaporite deposits.

Laterite—In the southern half of the State the remnants of the Darling Plateau are covered by a thin layer up to 10 or 15 feet thick of a reddish brown rock composed of spherical pebbles tightly or loosely cemented together by a lighter-coloured earthy matrix. This material in its poorly consolidated state is popularly referred to as " ironstone gravel " and when strongly cemented as " ironstone." This rock, called laterite, although it covers large areas, is purely superficial and wells or bores sunk in it pass within a few feet into highly weathered country rock which may extend down for distances up to 100 feet before encountering fresh unweathered rock. This laterite crust and the underlying highly weathered country rock were developed just prior to the formation of the Darling Plateau when it was a gently undulating peneplain lying close to sea-level. Subsequently, probably in Pliocene times, this laterite-covered peneplain was uplifted to form the *Darling Plateau.* This uplift, judged by the elevation of the laterite-capped hills and the occurrence of fossiliferous marine Eocene sediments 900 feet above sea-level at Norseman, was of the order of one thousand feet. On the Great Plateau, remnants of this Darling Plateau are evidenced by the table-topped hills so characteristic of much of the Plateau country. The significance of the laterite profile and the soils developed from the laterite and associated weathered rocks has already been mentioned. Economically, the laterite is important for road-making materials and in a few places (such as Wundowie) as an iron ore. The main constituents of the laterite are the insoluble products of intense rock weathering—iron oxide, alumina and silica. In many places the alumina content is sufficiently high to call them bauxites. Bauxites are the main source of aluminium, and the bauxitic laterites of the Dwellingup area in the Darling Range near Perth are being exploited as aluminium ore.

In the far south-west of the State subsurface hard pan formations consisting of ferruginous sandstone are a potential source of low-grade iron ore.

Soils and drift sands—Western Australia, an area of 975,920 square miles extending from lat. 14°S. to lat. 35°S., although having little variety in its broad physical features, has very considerable variation in climates from the tropical areas of summer rainfall in the north through a central and inland province of low rainfall to the temperate areas of winter rainfall in the south. Moreover, throughout this enormous area there is very considerable variation in the nature of the country rocks. The nature of the soils developed is dependent on these two factors—climate and parent rock—so it will be apparent that there will be very considerable variation in the soils over this extensive area. L. J. H. Teakle has recognized the following major soil zones of Western Australia :—

A. Grey, yellow and red podsolised, or leached, soils of the temperate sclerophyll forests.

B. Red brown earths of the eucalyptus-acacia woodlands.

C. Grey and brown calcareous, solonised soils of the low rainfall eucalyptus woodlands—(" mallee " soil zone of Prescott).

D. Red and brown acidic soils of the acacia semi-desert scrub—mulga, etc.

E. Brown acidic soils of the spinifex semi-desert steppes of the north-west.

F. Pinkish brown calcareous soils of the Nullarbor Plain desert shrub steppes.

G. Pinkish brown calcareous soils of the acacia semi-desert scrub, mallee and salt bush-blue bush zone.

H. Brown soils of the tropical woodlands, savannahs and grasslands.

I. Red sands of the central desert sandhills—spinifex with desert acacias, desert gums and mallees (*Eucalyptus spp.*)

Each of these major soil zones may be subdivided into one or more soil regions and the reader is referred to a paper "A Regional Classification of the Soils of Western Australia " by L. J. H. Teakle (*Jour. Roy. Soc. West. Aust. XXIV, pp.* 123–195) for details concerning the soil characteristics of these various zones and regions.

There are considerable areas of Western Australia covered by drift sand which may be in the form of parallel red sand dunes or, in the southern part of the State, extensive sandy plains. The latter have been generally considered to be residual from the weathering of granite, but closer examination of grain shape indicates that the sands forming much of the sandplain country have been transported for great distances either by wind or water. The youngest of the drift sand deposits are the coastal sand dunes.

Coastal sand deposits are of considerable economic importance. At various places along the south and west coasts there are beach sand deposits in which there is a considerable natural concentration of heavy minerals such as zircon, monazite, rutile and ilmenite. Such deposits are at present being exploited at Capel and Bunbury for their ilmenite content, which is valuable because of its low chrome content. Meanwhile the other heavy minerals such as zircon and monazite are being stockpiled for future use.

Salt lake deposits—These together with the coastal sand deposits represent the youngest of the geological formations developed—indeed they are in course of formation at the present time. They are evaporite deposits resulting from the evaporation of lake waters in the areas of internal drainage. Soluble salts produced by rock weathering are leached out by rain and running water and transported by streams to these lakes. During the long dry summers most of these lakes dry up and the soluble salts are deposited, yielding accumulations of gypsum and common salt. In a few of these lakes hydrated potassium aluminium sulphate (alunite), which is a valuable source of potash for fertilizers, has been formed but its actual mode of formation has not yet been satisfactorily explained.

Conclusion

From the foregoing summary of the geology of Western Australia we see that, although nowhere do we find the complete geological succession, somewhere in the State there are deposits representative of every Period. The geological history of Western Australia begins with the basaltic igneous activity of the Early Archaeozoic some 3,000 million years ago, followed by sedimentation, intense mountain building activity and associated granitization and granite intrusions leading to the formation of the major deposits of economically important minerals. In post-Archaean times there is a record of sedimentation throughout all the main geological periods. Igneous activity ceased in the Lower Palaeozoic and only re-occurred during the late Mesozoic, yielding the basaltic lavas of the far South-West and the volcanic rocks of the West Kimberley. Geological processes are continuing and at the present day rocks and soils are still in the process of formation.

CHAPTER II — *continued*

PART 2 — CLIMATE AND METEOROLOGY

(Contributed by the Western Australian Divisional Office of the Bureau of Meteorology)

Western Australia is the largest State in the Commonwealth, extending from latitude 14°S. to 35°S. and from longitude 113°E. to 129°E. It stretches a distance of about 1,500 miles in a north-south direction and about 1,000 miles west-east. A little more than one-third of the State lies within the tropics, while the remainder extends southward to the temperate zone.

Because of its large size and its latitudinal position, Western Australia has entirely different climates in its northern and southern parts, while in the central regions there is a gradual change from the tropical climate of the north to the typical Mediterranean climate of the south.

Most of the State is a plateau between 1,000 and 2,000 feet above mean sea-level and there are no outstanding mountain ranges. Where the edge of the plateau forms the Darling Range along the southern part of the west coast, it exerts a marked influence on the rainfall, causing a rapid increase from the coastal plain to the higher land. Elsewhere the effect of topography is less marked and its main influence is seen in the general decrease of rainfall with increasing distance from the coast.

PROVISION OF METEOROLOGICAL SERVICES [1]

In May, 1829 Captain James Stirling, R.N., then Lieutenant-Governor of the Colony, issued instructions to the Colonial Surgeon, Mr. Charles Simmons, in the following terms, " A Meteorological Journal is to be kept of the weather and heights of the barometer and thermometer, the direction of the wind, the state of the weather and every detail of every circumstance in the weather affecting health." This is the first reference in Western Australian history to the establishment of regular meteorological observations.

It was apparently intended at the time that the Surveyor of the Colony should keep a parallel weather record, since Captain Stirling addressed a letter on the 14th July, 1829 to Captain Fremantle, R.N., asking for a copy of the weather record kept in a ship under the latter's command which had been in port at Fremantle for some time, explaining as the reason for this request that the Surveyor had not been able to keep his observations. There is in existence a weather record which was compiled continuously in the Survey Department from April, 1830.

In the Surveyor-General's Meteorological Report for the year 1876 it is recorded that a meteorological station was set up in that year at the Surveyor-General's Office, Perth. The journals between 1830 and 1875 contain entries of pressure, temperature, wind and weather only, but the Meteorological Report for 1876 shows that in that year the observations included dry and wet bulb maximum and minimum temperature readings, terrestrial and solar radiation, rainfall, evaporation and ozone measurements, and that wind observations, at 55 feet above mean sea-level at Arthur's Head, Fremantle, were also made.

Mr. M. A. C. Fraser (later Registrar-General) was appointed Meteorological Observer in 1876. He became Meteorological Reporter in 1883 and continued in that office until 1896. On the 1st July, 1893 the Meteorological Branch ceased to be part of the Lands and Surveys Department and became a section of the Registry Branch of the Colonial Secretary's Department. When the Western Australian Government established an Astronomical Observatory at Perth in 1896, the meteorological duties were included in the functions of the Government Astronomer.

Under the authority of the Meteorology Act 1906 (Commonwealth) meteorology became a Commonwealth responsibility, and the meteorological service in Western Australia passed to Commonwealth control in 1908. The present Meteorology Act (No. 6 of 1955), which repealed the Act of 1906, defines the functions of the Commonwealth Bureau of Meteorology as " (*a*) the taking and recording of meteorological observations and other observations required for the purposes of meteorology ; (*b*) the forecasting of weather and of the state of the atmosphere ; (*c*) the issue of warnings of gales, storms and other weather conditions likely to endanger life or property, including weather conditions likely to give rise to floods or bush fires ; (*d*) the supply of meteorological information ; (*e*) the publication of meteorological reports and bulletins ; (*f*) the promotion of the use of meteorological information ; (*g*) the promotion of the advancement of meteorological science, by means of meteorological research and investigation or otherwise ; (*h*) the furnishing of advice on meteorological matters ; and (*i*) co-operation with the authority

[1] A brief account of the historical development of meteorological services in Western Australia is given on pp. 34–35 of the *Official Year Book of Western Australia*, 1960, *No.* 2 (*New Series*) and on pp. 36–37 of the succeeding issue, *No.* 3, 1962.

administering the meteorological service of any other country in relation to any of the matters specified " The Act requires that the functions of the Bureau shall be performed in the public interest generally and, in particular, for the purposes of the Defence Forces ; for the purposes of navigation and shipping and of civil aviation ; and for the purpose of assisting persons and authorities engaged in primary production, industry, trade and commerce.

To enable the Bureau to perform its functions the Director of Meteorology has powers to " (*a*) establish meteorological offices and observing stations ; (*b*) arrange with any Department, authority or person to take and record meteorological observations and transmit meteorological reports and information ; (*c*) arrange means of communication for the transmission and reception of meteorological reports and information ; and (*d*) arrange for the training of persons in meteorology."

With the growth of the meteorological service the number of observing stations in Western Australia has increased until now (1963) some or all of the elements temperature, rainfall and cloud, pressure, weather, visibility, sea and swell are observed and recorded at least once daily at 100 places, 28 of these reporting seven times each day. In addition, rainfall only is measured and reported at approximately 1,000 stations. The development of meteorological science and of civil aviation operations has necessitated adequate measurements of winds blowing in the upper atmosphere and observations are made several times daily at 12 stations. Radar units have been installed at a number of places to assist high-flying aircraft under all conditions, to determine the speed and direction of winds aloft and for the detection and tracking of tropical cyclones as well as other storms. A network of radio direction-finding stations has also been developed for locating areas of thunderstorm activity. Because modern research has indicated the need for a continuous record of upper atmosphere developments in order to provide adequate forecasting and warning services, five stations are also equipped to measure temperature and humidity at altitudes of up to 70,000 feet and higher.

Forecasting offices staffed by trained personnel are located in Western Australia at the Observatory Building in Perth, at Perth Airport and at Port Hedland. They provide specialized forecasts for aviation, shipping and transport services and for all aspects of primary production, industry, trade and commerce, as well as general forecasts for public use. These offices also issue warnings of gales or storms (including tropical cyclones), floods, thunderstorms, frosts, and conditions likely to constitute a bush fire hazard. Highly-trained staff are available to supply information in the form of special investigations into and reports on the meteorological aspects of major problems affecting engineering projects, primary production, the development of various areas and of facilities such as ports and aviation and shipping routes. Advice is also furnished, as required, to the community generally.

The foregoing services are of limited value unless information can be made available where and when required. It is obvious that every user cannot in person collect what he seeks. In order to achieve the maximum possible dissemination of information, the co-operation of the press and of radio and television services throughout the State has been procured. Thus there is now a complete forecasting and warning coverage of the whole State and of air and shipping lanes to other parts of the Australian continent and adjacent sea areas to the north, west and south. For the information of shipping on the high seas forecasts and warnings are broadcast twice daily from coastal radio stations. For small craft, such as fishing vessels, operating closer to the coast, forecasts specifically related to coastal areas are transmitted twice daily from national and commercial broadcasting stations as well as from the coastal radio stations. Forecasts and weather summaries are provided for public information by means of a number of transmissions daily from broadcasting and television stations. Forecasts are prepared a number of times throughout the day. The principal periods of broadcasting are between 6.30 a.m. and 8 a.m., noon and 1 p.m., and 6 p.m. and 8 p.m. The forecasts are repeated at other times. Weather information is published also in metropolitan and country newspapers.

In addition to the forecasting and warning services provided by means of radio and television, information on temperature, rainfall and general weather conditions existing over the State is given several times daily by the same means.

The Commonwealth Bureau of Meteorology produces a number of publications, in the form of tabulations, summaries or maps, which are issued daily, monthly, quarterly or annually. In addition to these regular releases, books or pamphlets containing the results of special investigations, reports on completed projects and statistical data collected over long periods are issued from time to time. The publications of the Bureau are obtainable from the Divisional Office in the capital city of each State.

PRESSURE SYSTEMS

Weather during the year is controlled largely by the movement of the anticyclonic belt (high pressure systems with anti-clockwise winds), which lies in an east-west direction across the continent for about six months of the year.

In winter this system moves northward, bringing clear skies with fine sunny days and easterly winds to the tropics. With this northward movement, westerly winds on the southern side of the anticyclones extend over the southern part of the State, bringing with them cool cloudy weather and rain. In mid-winter the northern fringe of the " Roaring Forties " extends to Western Australia and there are frequent westerly gales in the south coastal belt.

These westerly winds are maintained by a series of depressions (low pressure systems with clockwise winds), which move eastward well south of the Western Australian coast, and others which originate in the Indian Ocean and move south-eastward past Cape Leeuwin. The extent to which westerlies affect the State depends largely on the intensity and the position of these depressions.

Towards the end of winter the anticyclonic belt moves southward, and the westerlies are confined more to the lower south-west and the south coastal districts. By summer the anticyclonic belt has moved so far south that its centre is off the south coast and easterly winds prevail over most of the State.

During this summer period the midday sun is at a high elevation in the tropics and the continual heating leads to the development of a monsoonal depression over this region. Wind circulation round this system causes easterlies on its southern or inland side, but in the coastal districts north-east from Onslow, and in parts of the Kimberley, westerlies prevail. Winds in both the north and the south of the State are then in the opposite direction to those prevailing during the winter.

As the sun moves northward again the anticyclonic belt follows it. The monsoonal depression over the tropics dissipates and westerlies again gradually extend northward to the southern part of the State.

During the northern " Wet " season (from about December to March), occasional cyclones, known locally as " willy willys," bring strong winds and rain to the tropics. They originate generally in the Timor Sea or off the north-west coast and often move first in a south-westerly direction parallel to the coast and later in a south-easterly direction.

They frequently move inland between Broome and Onslow but occasionally travel further westward before curving to the south-east and moving inland over the west coast. Others fade out at sea without ever crossing the coast. Those that move inland usually commence to dissipate soon after crossing the coast, but occasionally they move right across the State, passing into the Southern Ocean and moving off towards Tasmania.

These storms are often extremely violent and have on occasions almost completely wrecked towns on the north-west coast, while a cyclone which struck a pearling fleet off the Eighty Mile Beach in 1887 caused the loss of 22 vessels and 140 lives.

However, despite the damage which they cause, the storms are of great benefit to the pastoral regions on account of the heavy and widespread rain which generally accompanies them. The heaviest fall ever recorded in one day in Western Australia, 29·41 inches, was received at Whim Creek from a cyclone in 1898.

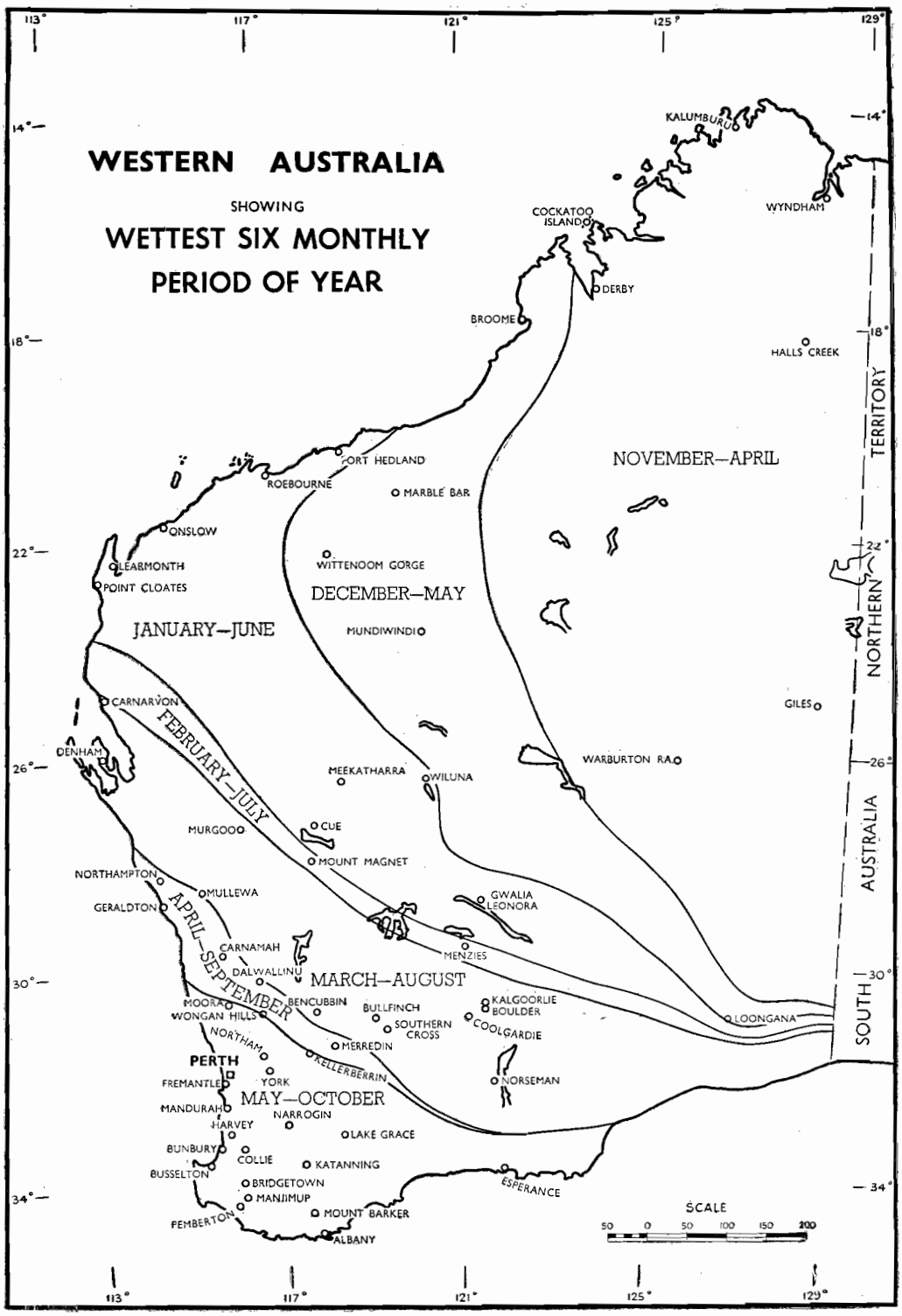
RAINFALL

The moist rain-bearing winds in this State are in general from a westerly direction. The easterlies, having come from the dry inland parts of Australia, usually bring fine weather and clear skies.

Because of this the highest rainfall occurs in the winter months in the south of the State, and in the summer months in the north. In between these areas there is a gradual change from one rainfall regime to the other.

From the map on page 47, which shows the wettest six-monthly period of the year, it can be seen that summer rains extend southward from the Kimberley to the Trans-Australian Railway, where there is a rapid change to the winter rainfall regime of the south coast. However, the difference between summer and winter totals decreases southward, and the southern part of this region is one of almost uniform rainfall.

Proceeding northward from the winter rainfall area of the south-west of the State, the wet period occurs earlier during the year. Across a belt Carnarvon-Menzies-Eucla, there is a more rapid change,


WESTERN AUSTRALIA
SHOWING
WETTEST SIX MONTHLY PERIOD OF YEAR
NOVEMBER—APRIL
DECEMBER—MAY
JANUARY—JUNE
FEBRUARY—JULY
MARCH—AUGUST
APRIL—SEPTEMBER
MAY—OCTOBER
KALUMBURU
WYNDHAM
COCKATOO ISLAND
DERBY
BROOME
HALLS CREEK
PORT HEDLAND
ROEBOURNE
MARBLE BAR
ONSLOW
WITTENOOM GORGE
LEARMONTH
POINT CLOATES
MUNDIWINDI
CARNARVON
DENHAM
MEEKATHARRA
WILUNA
WARBURTON RA.
GILES
MURGOO
CUE
MOUNT MAGNET
NORTHAMPTON
MULLEWA
GERALDTON
GWALIA
LEONORA
CARNAMAH
DALWALLINU
MENZIES
MOORA
BENCUBBIN
BULLFINCH
KALGOORLIE BOULDER
WONGAN HILLS
SOUTHERN CROSS
COOLGARDIE
LOONGANA
NORTHAM
MERREDIN
PERTH
KELLERBERRIN
FREMANTLE
YORK
NORSEMAN
MANDURAH
NARROGIN
HARVEY
LAKE GRACE
BUNBURY
COLLIE
KATANNING
BUSSELTON
BRIDGETOWN
ESPERANCE
MANJIMUP
MOUNT BARKER
PEMBERTON
ALBANY
SCALE
50 0 50 100 150 200
TERRITORY
NORTHERN
AUSTRALIA
SOUTH
113°
117°
121°
125°
129°
14°
18°
22°
26°
30°
34°

and this belt divides the winter rainfall area from that which receives most of its rain in the first six months of the year. Further north, the change is more gradual but continuous, and in the Kimberley most of the year's rainfall is received in the summer months, which in the southern parts of the State are the driest of the year.

The mean annual rainfall for the State is shown on the map preceding the index to the Year Book.

The following table shows the average rainfall and number of wet days, the highest and lowest monthly totals, and the highest daily fall for various centres.

RAINFALL AT REPRESENTATIVE CLIMATOLOGICAL STATIONS

(Stations are arranged from north to south in three groups : Coastal, Wheat Belt and Other Inland)

Reporting Station and Characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
COASTAL													
Wyndham (23 feet†)—													
Rainfall —Average (points)	763	632	467	81	24	17	16	3	9	44	190	418	2,664
Highest (points)	2,824	2,058	1,758	2,027	302	473	524	54	136	334	558	1,088	5,634
Lowest (points)	51	54	0	0	0	0	0	0	0	0	3	28	1,438
Highest one day (points)	1,212	590	1,250	1,732	247	445	338	42	136	225	335	383	1,732
Wet days—Average number	13	11	9	3	1	0	0	0	0	2	6	10	55
Broome (37 feet†)—													
Rainfall —Average (points)	648	568	393	115	61	96	20	11	5	3	56	325	2,301
Highest (points)	3,256	2,358	1,151	1,019	700	973	232	374	86	48	1,095	1,449	4,307
Lowest (points)	11	42	4	0	0	0	0	0	0	0	0	3	561
Highest one day (points)	1,400	1,191	1,062	714	346	563	216	147	82	28	553	680	1,400
Wet days—Average number	10	8	7	2	2	1	1	0	0	0	1	6	38
Port Hedland (25 feet†)—													
Rainfall —Average (points)	217	216	344	103	115	129	40	38	5	6	10	33	1,256
Highest (points)	1,969	1,432	1,716	728	873	696	384	584	99	129	336	1,023	4,013
Lowest (points)	0	0	0	0	0	0	0	0	0	0	0	0	125
Highest one day (points)	600	955	1,113	469	638	560	185	364	85	127	304	900	1,113
Wet days—Average number	4	4	4	1	2	2	1	1	0	0	0	1	20
Onslow (14 feet†)—													
Rainfall —Average (points)	96	106	169	98	162	157	76	44	4	2	4	15	933
Highest (points)	1,028	1,411	1,476	1,100	998	908	872	594	49	61	237	241	2,823
Lowest (points)	0	0	0	0	0	0	0	0	0	0	0	0	85
Highest one day (points)	932	1,079	1,229	617	937	436	355	251	27	29	117	198	1,229
Wet days—Average number	3	3	4	2	3	3	2	2	0	0	0	1	23
Carnarvon (15 feet†)—													
Rainfall —Average (points)	41	70	66	64	149	240	156	68	23	12	3	16	908
Highest (points)	614	719	520	647	800	865	570	365	91	198	75	483	2,536
Lowest (points)	0	0	0	0	0	5	6	0	0	0	0	0	272
Highest one day (points)	358	441	470	197	410	475	322	193	63	104	28	469	475
Wet days—Average number	2	2	2	2	5	6	6	5	2	2	0	1	35
Geraldton (13 feet†)—													
Rainfall —Average (points)	22	28	56	92	274	474	379	279	128	70	26	15	1,843
Highest (points)	379	517	666	457	1,292	1,292	958	952	412	335	157	230	3,365
Lowest (points)	0	0	0	0	0	121	70	33	0	0	0	0	1,136
Highest one day (points)	310	324	369	270	307	430	201	365	169	289	140	202	430
Wet days—Average number	2	2	3	4	10	13	14	13	9	6	3	1	80
Perth—Observatory (197 ft.†)—													
Rainfall —Average (points)	31	46	80	180	501	725	678	571	329	220	83	60	3,504
Highest (points)	217	655	571	585	1,213	1,875	1,228	1,253	784	787	278	317	5,267
Lowest (points)	0	0	0	0	98	216	242	46	34	15	0	0	2,000
Highest one day (points)	174	353	303	262	300	390	300	291	182	173	140	184	390
Wet days—Average number	3	3	4	7	14	17	18	18	14	12	7	4	121
Pinjarra (32 feet†)—													
Rainfall —Average (points)	34	41	82	187	542	760	729	619	389	253	89	59	3,784
Highest (points)	167	862	331	730	998	2,104	1,571	1,494	916	1,017	368	291	5,879
Lowest (points)	0	0	0	0	127	265	330	47	33	11	4	0	2,030
Highest one day (points)	145	443	197	560	337	367	400	350	189	211	159	160	443
Wet days—Average number	3	2	4	6	14	17	18	18	15	11	6	4	118
Bunbury (17 feet†)—													
Rainfall —Average (points)	39	49	95	172	513	710	676	516	350	231	93	53	3,497
Highest (points)	340	411	330	690	1,047	1,620	1,640	1,193	793	769	261	316	5,374
Lowest (points)	0	0	0	0	38	287	194	82	0	26	0	0	1,904
Highest one day (points)	222	338	258	240	317	472	372	263	227	154	205	104	472
Wet days—Average number	3	3	4	7	15	18	20	18	15	12	6	4	125

† Height above mean sea-level.

RAINFALL AT REPRESENTATIVE CLIMATOLOGICAL STATIONS—*continued*

Reporting Station and Characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
COASTAL—*continued*													
Pemberton (565 feet†)—													
Rainfall —Average (points)	146	55	190	350	700	868	804	920	546	468	201	116	5,364
Highest (points)	579	347	519	761	1,101	1,469	1,563	1,572	860	764	577	379	6,897
Lowest (points)	24	5	11	42	141	497	571	416	139	97	74	19	4,338
Highest one day (points)	252	133	250	284	310	248	280	181	163	210	222	137	310
Wet days—Average number	8	5	10	13	18	21	22	21	18	15	11	10	172
Mount Barker (829 feet†)—													
Rainfall —Average (points)	90	87	149	209	342	387	418	372	334	289	143	109	2,929
Highest (points)	579	709	505	920	957	824	1,027	683	618	630	532	343	4,326
Lowest (points)	4	3	14	15	64	183	88	131	72	64	22	5	1,688
Highest one day (points)	412	284	192	548	270	206	285	259	175	214	251	165	548
Wet days—Average number	8	7	11	13	18	20	22	21	18	17	11	10	176
Albany (41 feet†)—													
Rainfall —Average (points)	100	87	161	275	502	547	559	532	410	325	146	118	3,762
Highest (points)	854	635	653	789	1,140	1,152	1,060	1,124	796	736	671	459	5,483
Lowest (points)	4	0	10	19	174	159	205	198	80	56	19	6	2,507
Highest one day (points)	345	226	353	226	408	285	240	443	312	184	307	323	443
Wet days—Average number	8	7	11	13	18	20	21	20	18	16	11	9	172
Esperance (14 feet†)—													
Rainfall —Average (points)	69	69	117	175	326	406	404	384	271	220	102	89	2,632
Highest (points)	524	471	491	691	705	1,076	945	727	564	574	453	320	3,625
Lowest (points)	0	0	0	8	80	109	122	75	42	52	1	0	1,724
Highest one day (points)	274	154	175	496	171	416	218	232	455	179	197	279	496
Wet days—Average number	5	4	7	9	15	15	16	15	13	12	7	6	124
WHEAT BELT													
Carnamah (879 feet†)—													
Rainfall —Average (points)	45	53	85	85	207	320	277	228	125	73	42	39	1,579
Highest (points)	404	405	539	409	551	910	742	757	332	262	357	222	3,078
Lowest (points)	0	0	0	0	6	83	53	51	2	0	0	0	917
Highest one day (points)	380	226	299	232	290	241	170	260	129	157	280	197	380
Wet days—Average number	2	1	3	4	9	11	13	11	7	5	2	2	70
Dalwallinu (1,099 feet†)—													
Rainfall —Average (points)	55	72	96	83	157	274	231	188	104	73	51	38	1,422
Highest (points)	267	409	361	353	403	705	570	555	270	142	394	176	2,161
Lowest (points)	0	0	0	0	3	88	69	31	7	5	0	0	471
Highest one day (points)	262	313	248	161	217	373	158	234	79	112	206	158	373
Wet days—Average number	2	1	3	4	8	11	12	10	7	6	3	2	69
Northam (490 feet†)—													
Rainfall —Average (points)	33	39	83	83	225	322	340	257	151	100	39	39	1,711
Highest (points)	212	747	744	304	555	916	871	669	506	395	162	259	2,798
Lowest (points)	0	0	0	0	4	40	77	26	10	0	0	0	830
Highest one day (points)	148	455	497	258	257	226	220	150	180	185	126	195	497
Wet days—Average number	2	2	3	5	11	14	16	14	10	8	4	3	92
Merredin (1,046 feet†)—													
Rainfall —Average (points)	40	46	93	95	155	202	212	156	105	88	45	63	1,300
Highest (points)	220	315	472	447	462	516	495	340	337	296	233	265	1,964
Lowest (points)	0	0	0	0	5	23	46	24	0	7	0	0	512
Highest one day (points)	118	260	325	235	194	160	181	132	176	105	144	191	325
Wet days—Average number	2	3	3	6	8	12	15	11	8	5	3	3	79
Narrogin (1,114 feet†)—													
Rainfall —Average (points)	38	55	91	111	265	343	369	292	209	140	54	48	2,015
Highest (points)	167	934	502	318	599	1,182	957	729	478	483	212	271	2,917
Lowest (points)	0	0	0	0	38	99	142	68	26	6	0	0	1,056
Highest one day (points)	167	454	450	158	269	280	320	165	144	139	81	196	454
Wet days—Average number	2	3	4	5	11	13	15	14	11	9	4	3	94
Lake Grace (946 feet†)—													
Rainfall —Average (points)	67	52	131	100	193	208	208	180	122	112	55	55	1,483
Highest (points)	401	843	467	236	456	587	504	411	303	307	386	189	2,348
Lowest (points)	0	0	0	2	8	67	50	36	10	0	0	0	837
Highest one day (points)	324	378	355	168	204	185	238	142	128	91	231	175	378
Wet days—Average number	2	2	3	6	9	15	16	13	10	6	4	4	90
Katanning (1,016 feet†)—													
Rainfall —Average (points)	43	51	105	118	246	297	306	248	187	153	64	64	1,882
Highest (points)	341	884	525	638	583	721	685	1,199	384	450	355	293	3,077
Lowest (points)	0	0	0	2	28	100	86	71	14	17	0	0	1,072
Highest one day (points)	253	495	271	417	233	276	182	117	127	198	165	216	495
Wet days—Average number	4	3	5	6	13	16	18	16	13	10	5	4	113

† Height above mean sea-level.

RAINFALL AT REPRESENTATIVE CLIMATOLOGICAL STATIONS—*continued*

Reporting Station and Characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
OTHER INLAND													
Halls Creek (1,225 feet†)—													
Rainfall —Average (points)	554	433	292	69	37	26	25	9	16	52	137	316	1,966
Highest (points)	2,274	1,467	1,451	646	255	343	316	221	207	408	789	905	4,204
Lowest (points)	54	11	0	0	0	0	0	0	0	0	0	29	854
Highest one day (points)	650	510	685	578	241	143	129	205	123	142	198	264	685
Wet days—Average number	12	10	7	2	1	1	1	1	1	3	6	9	54
Marble Bar (595 feet†)—													
Rainfall —Average (points)	299	267	226	94	71	110	49	20	3	21	38	143	1,341
Highest (points)	1,219	924	1,530	947	588	625	527	135	95	458	242	957	2,920
Lowest (points)	0	0	0	0	0	0	0	0	0	0	0	0	297
Highest one day (points)	574	470	1,200	536	274	412	247	125	95	332	238	592	1,200
Wet days—Average number	7	6	5	2	2	2	1	1	0	0	1	4	31
Mundiwindi (1,840 feet†)—													
Rainfall —Average (points)	183	162	235	79	77	78	25	30	16	48	44	125	1,102
Highest (points)	814	592	836	543	477	445	276	209	240	368	280	628	3,211
Lowest (points)	0	0	0	0	0	0	0	0	0	0	0	0	103
Highest one day (points)	274	278	688	223	219	159	168	152	135	210	227	450	688
Wet days—Average number	6	6	5	2	4	2	3	1	1	1	2	3	36
Meekatharra (1,676 feet†)—													
Rainfall —Average (points)	146	90	156	94	112	95	64	59	16	17	29	57	935
Highest (points)	841	526	608	542	514	615	200	304	143	101	371	411	2,034
Lowest (points)	0	0	0	0	0	0	0	0	0	0	0	0	191
Highest one day (points)	335	330	405	431	303	220	134	153	132	84	322	270	431
Wet days—Average number	4	3	5	3	4	4	4	3	1	1	2	2	36
Kalgoorlie (1,247 feet†)—													
Rainfall —Average (points)	63	68	114	86	111	110	85	95	44	71	55	67	969
Highest (points)	802	1,238	655	404	341	467	306	318	386	314	276	257	1,804
Lowest (points)	0	0	0	0	0	0	8	0	0	0	0	0	507
Highest one day (points)	379	700	279	282	315	225	147	137	174	246	254	199	700
Wet days—Average number	2	2	3	3	5	6	8	6	3	3	3	2	46
Loongana (603 feet†)—													
Rainfall —Average (points)	58	48	68	53	76	57	35	66	25	59	40	66	651
Highest (points)	553	409	228	334	366	611	137	186	165	247	159	340	1,563
Lowest (points)	0	0	0	0	0	0	0	0	0	0	0	0	232
Highest one day (points)	277	288	154	103	127	260	90	170	154	137	103	265	288
Wet days—Average number	2	2	2	2	3	3	3	2	2	2	3	2	28

†Height above mean sea-level.

EVAPORATION

Except in the lower south-west, evaporation from a free water surface exceeds the annual rainfall, and in a large proportion of the State it is more than ten times greater than the rainfall.

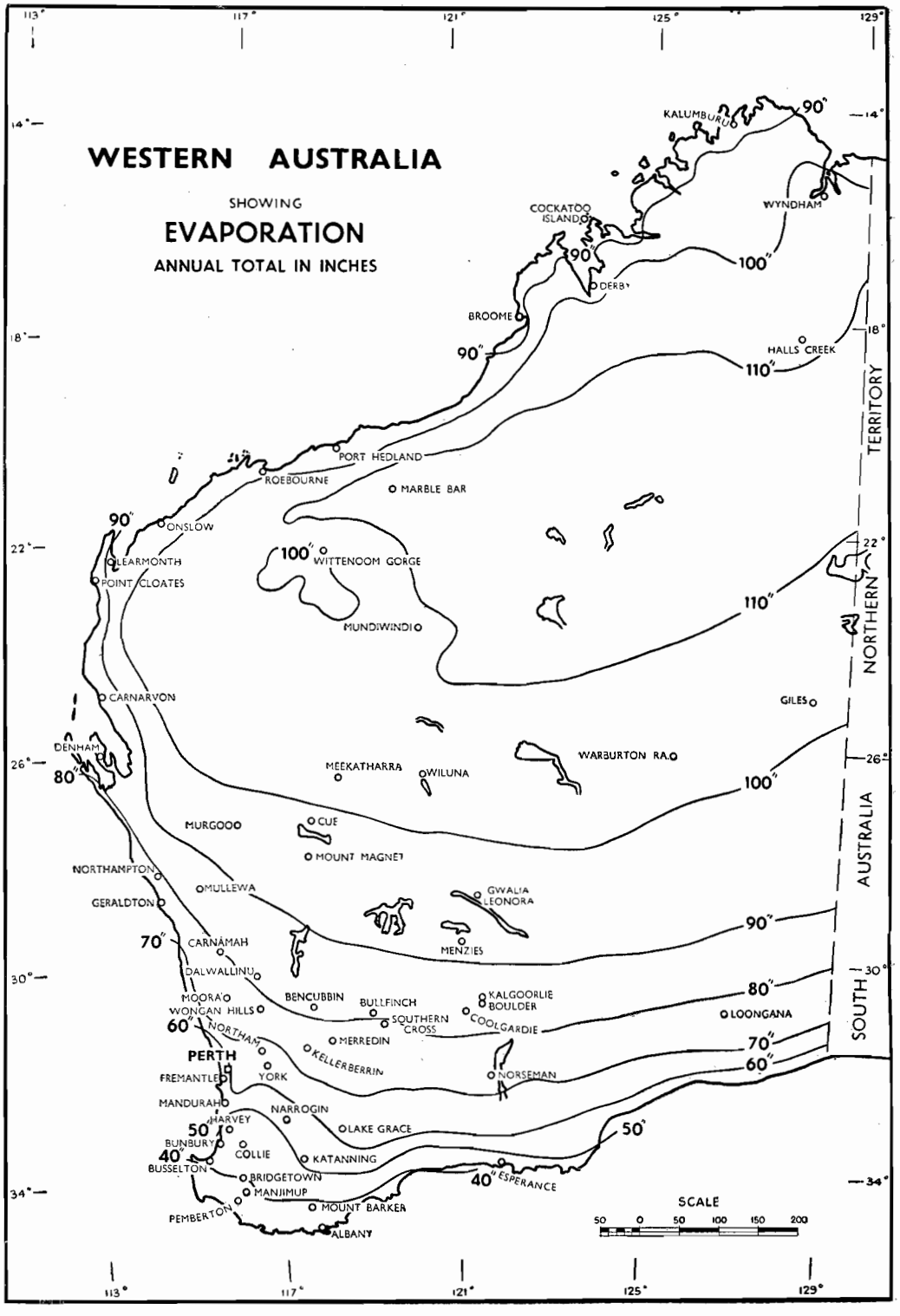
It is least in the winter months, amounting in July to less than 1 inch in the far south-west, and to about 8 inches in the northern tropics. In January, when evaporation is highest, it totals about 5 inches on the far south coast and reaches 14 inches in the East Gascoyne and North-Eastern Meteorological Districts. Further north, evaporation is reduced by the moister air over the tropics at this time of the year.

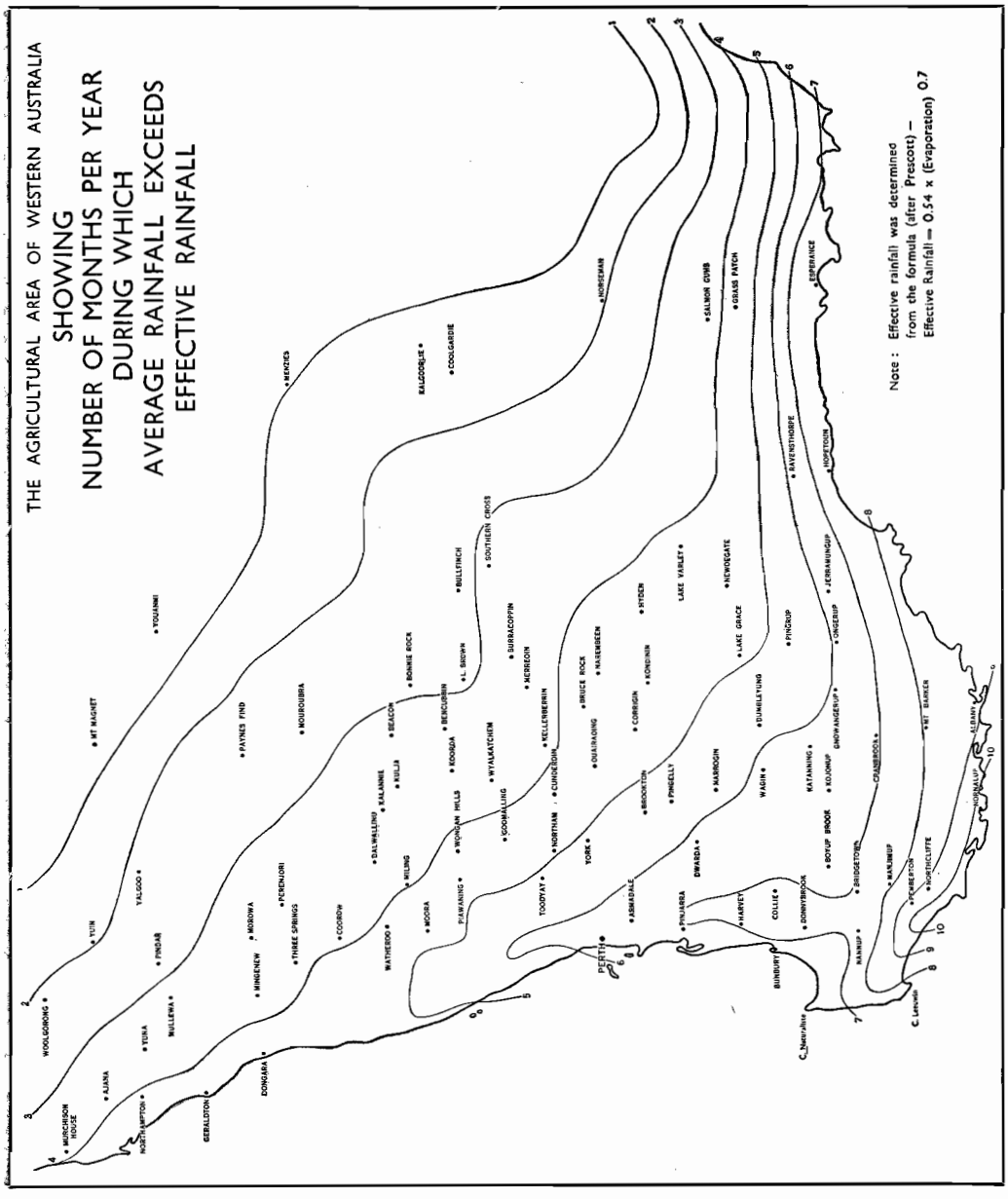
The map on page 51 shows total annual evaporation throughout the State.

GROWING SEASON

Less moisture is required to sustain plant life when evaporation is low than when it is high, and the minimum amount required can be related to evaporation from a free water surface.

That part of the year during which rainfall is greater than this minimum amount (the " effective rainfall "), may be taken as the *growing season*. The map on page 52 shows the length of this season in the agricultural area of the State. It is based on average monthly rainfall and effective rainfall, the latter being calculated from the formula $P = 0{\cdot}54 \times E^{0{\cdot}7}$ (after Prescott), where P is effective rainfall and E is evaporation (both in inches per month).


WESTERN AUSTRALIA
SHOWING
EVAPORATION
ANNUAL TOTAL IN INCHES
KALUMBURU
COCKATOO ISLAND
WYNDHAM
DERBY
BROOME
HALLS CREEK
PORT HEDLAND
ROEBOURNE
MARBLE BAR
ONSLOW
LEARMONTH
POINT CLOATES
WITTENOOM GORGE
MUNDIWINDI
CARNARVON
GILES
DENHAM
MEEKATHARRA
WILUNA
WARBURTON RA.
MURGOOO
CUE
MOUNT MAGNET
NORTHAMPTON
MULLEWA
GERALDTON
GWALIA
LEONORA
CARNAMAH
MENZIES
DALWALLINU
MOORA
WONGAN HILLS
BENCUBBIN
BULLFINCH
SOUTHERN CROSS
KALGOORLIE BOULDER
COOLGARDIE
LOONGANA
NORTHAM
MERREDIN
PERTH
KELLERBERRIN
NORSEMAN
FREMANTLE
YORK
MANDURAH
NARROGIN
HARVEY
LAKE GRACE
BUNBURY
COLLIE
KATANNING
BUSSELTON
BRIDGETOWN
ESPERANCE
MANJIMUP
MOUNT BARKER
PEMBERTON
ALBANY
90"
100"
110"
80"
70"
60"
50"
40"
SCALE
50 0 50 100 150 200
TERRITORY
NORTHERN
AUSTRALIA
SOUTH
14°
18°
22°
26°
30°
34°
113°
117°
121°
125°
129°


THE AGRICULTURAL AREA OF WESTERN AUSTRALIA
SHOWING
NUMBER OF MONTHS PER YEAR
DURING WHICH
AVERAGE RAINFALL EXCEEDS
EFFECTIVE RAINFALL
Note : Effective rainfall was determined from the formula (after Prescott) — Effective Rainfall = 0.54 × (Evaporation) 0.7
WOOLGORONG
MURCHISON HOUSE
AJANA
NORTHAMPTON
GERALDTON
YUNA
WILLENA
FINDAR
DONGARA
YUIN
TALOOD
NINGENEW
MORAWA
PERENJORI
THREE SPRINGS
COOROW
MT MAGNET
YOUANMI
PAYNES FIND
NOUROUBRA
WATHEROO
MOORA
PARKERVILLE
DALWALLINU
KALANNIE
KULJA
BEACON
WILUNG
WONGAN HILLS
KOORDA
BENCUBBIN
BONNIE ROCK
H. BROWN
BULLFINCH
WYALKATCHEM
SOUTHERN CROSS
SURRACOPPIN
MERREDIN
KELLERBERRIN
NORTHAM
CUNDERDIN
TOODYAY
YORK
BRUCE ROCK
QUAIRADING
NUNGARIN
CORRIGIN
KONDININ
HYDEN
BROOKTON
ARMADALE
PINJARRA
PINJARRA
DWARDA
MARRODIN
HARVEY
COLLIE
BUNBURY
C. Naturaliste
BOYANUP
BRIDGETOWN
MANJIMUP
WAGIN
DUMBLEYUNG
LAKE GRACE
NEWDEGATE
LAKE VARLEY
SALMON GUMS
GRASS PATCH
KATANNING
KOJONUP
BOYUP BROOK
DONNYBROOK
PINGRUP
ONGERUP
GNOWANGERUP
JERRAMUNGUP
RAVENSTHORPE
HOPETOUN
ESPERANCE
NORSEMAN
KALGOORLIE
COOLGARDIE
MENZIES
CHADWICK
NORTHCLIFFE
WEST BARKER
KENDALL
C. Leeuwin
ALBANY
PEMBERTON
MANJIMUP
PETTY

TEMPERATURE

The hottest month in Western Australia is November in the Kimberley, December a little further south and January near the Tropic of Capricorn. In the tropics temperatures generally rise from July, the coldest month, to November. In some places further rises occur, but in others the onset of the "Wet" prevents this further rise and there is a slight fall. As the rains cease at these latter places temperatures commence to rise again and there is another minor peak in March or April. After this there is a general fall until July.

South of the tropics the hottest month is January, except in coastal districts where February is hotter. The coldest month is again July.

The most consistently hot place in the State is Wyndham, where the mean maximum throughout the year is 93·1°F. and the mean minimum for the coldest month is 66·2°F. At Marble Bar the yearly mean maximum of 96·2°F. is higher, but mean minimum temperatures are consistently lower, falling to 52·5°F. in the coldest month. The mean maximum at this centre is the highest in Australia, exceeding 100°F. in the six months from October to March inclusive. There are often long spells of hot weather in this region and during one period, from the 31st October, 1923 to the 7th April, 1924, the maximum temperature at Marble Bar reached or exceeded 100°F. on 160 consecutive days.

Further south temperatures are lower, but even in the southern parts of the State there are occasional heat waves, and the highest temperature on record, 123·2°F., was recorded at Eucla on the south coast.

Near the coast the sea breeze generally brings relief from high temperatures. It blows nearly every afternoon in the hot months, and is known in Perth as the "Fremantle Doctor." Away from the influence of the sea, extremes are greater, day temperatures being higher and night temperatures lower than in the coastal districts. During the winter, temperatures have fallen below 30°F. in most of the inland part of the State south from the tropics. The lowest on record is 20·2°F. which occurred at Booylgoo Springs near Sandstone, and as far north as Mundiwindi, almost in the tropics, 22·4°F. has been recorded.

Frosts are at times widespread over the southern part of the State and occasionally extend into the tropics, but they are not particularly troublesome as they normally occur during that period of the year when crops are least susceptible to frost damage. They occur mainly in the months May to September inclusive and are most frequent in July and August.

The table on pages 54–56 shows, for each month of the year, the mean maximum, mean minimum, and extreme temperatures and the average number of days with registrations of 90°F. and over and of 100°F. and over. The average number of days with temperatures of 36°F. or below, which provides an indication of frost frequency, is also shown.

THUNDERSTORMS

Thunderstorms are most frequent along the Kimberley coast, where they occur during the "Wet" season but are practically unknown in the "Dry". In the remainder of the tropics they occur over roughly the same period, but the season is a little shorter and the storms less frequent.

In most of the State south from the tropics thunderstorms are most frequent in the summer months but in the south-west they are more uniformly distributed, and in many places in coastal districts they are most frequent in winter.

The winter storms are often accompanied by hail, which however is usually not heavy enough to cause any damage. Hail accompanying summer storms can be much heavier, and occasionally damages ripening crops in the wheat belt. Both winter and summer thunderstorms may be accompanied by tornadic squalls, but these are infrequent.

INTERSTATE COMPARISONS

In general, humidity and rainfall are lower in Western Australia than in corresponding places in eastern Australia. The first table on page 57 shows rainfall, mean humidity and temperature for groups of reporting stations at approximately the same latitude. The stations have been selected in such a way that, in each pair, one is on the west coast and the other on the east coast or, where a pair relates to inland stations, each station is situated at about the same distance from the coast. The group appearing last in the table has been included to provide a comparison between observations at Albany, the most southerly town in Western Australia, and those at places elsewhere in Australia at about the same latitude. The height above mean sea-level is also given for each station.

TEMPERATURES AT REPRESENTATIVE CLIMATOLOGICAL STATIONS

(Stations are arranged from north to south in three groups : Coastal, Wheat Belt and Other Inland)

Reporting Station and Characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
COASTAL													
Wyndham—													
Temperature :													
Mean max., °F.	95·9	95·5	95·3	94·7	90·1	85·8	85·0	88·5	93·5	96·9	98·5	97·6	93·1
Mean min., °F.	80·2	79·7	79·5	77·2	72·4	68·0	66·2	69·5	74·8	79·7	81·4	81·2	75·8
Highest max., °F.	113·5	111·0	108·0	106·0	103·0	97·5	96·0	102·0	106·0	111·0	111·9	112·0	113·5
Lowest min., °F.	67·0	62·0	65·0	63·0	52·0	50·0	48·0	47·0	60·1	65·0	62·0	65·0	47·0
Number of days 90° and over	29·2	25·6	29·1	26·3	26·2	11·7	13·4	24·1	29·5	30·6	29·3	29·0	304·0
Number of days 100° and over	17·3	12·3	15·6	7·2	0·7	0·0	0·0	0·4	4·3	16·8	21·9	18·3	114·8
Number of days 36° and under	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0
Broome—													
Temperature :													
Mean max., °F.	91·3	91·8	93·1	93·3	88·0	82·5	81·8	85·0	88·8	90·5	92·7	93·2	89·3
Mean min., °F.	79·2	79·1	77·7	71·6	64·8	59·5	57·0	60·0	65·1	72·1	76·7	79·4	70·2
Highest max., °F.	111·5	108·8	107·0	107·0	101·0	97·2	95·0	100·5	103·5	109·1	111·2	112·7	112·7
Lowest min., °F.	65·8	59·0	55·0	54·0	45·1	43·4	40·2	40·6	49·0	52·8	58·5	63·0	40·2
Number of days 90° and over	27·5	25·6	28·5	26·2	14·5	4·2	4·4	9·8	15·8	19·4	25·1	28·5	229·5
Number of days 100° and over	3·0	1·5	5·3	2·6	0·0	0·0	0·0	0·1	0·8	5·9	3·3	3·5	26·0
Number of days 36° and under	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0
Port Hedland—													
Temperature :													
Mean max , °F.	94·3	94·6	95·3	93·3	86·1	80·2	79·3	82·3	86·9	89·7	93·2	94·2	89·1
Mean min., °F.	79·4	79·1	77·6	71·2	63·7	57·9	55·6	58·4	62·5	68·1	73·5	77·5	68·7
Highest max., °F.	117·0	115·7	112·1	113·0	101·0	94·0	93·7	96·2	102·0	110·0	114·0	118·2	118·2
Lowest min., °F.	60·0	61·4	63·3	51·2	44·6	40·4	39·4	38·7	45·0	53·0	57·8	62·2	38·7
Number of days 90° and over	28·1	25·9	29·6	24·3	8·2	0·3	0·4	4·3	15·3	20·5	23·3	27·7	207·9
Number of days 100° and over	8·8	6·1	13·7	4·4	0·0	0·0	0·0	0·0	0·3	4·3	7·4	10·7	55·7
Number of days 36° and under	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0
Onslow—													
Temperature :													
Mean max., °F.	96·4	96·4	95·4	91·9	84·3	78·0	77·3	80·0	85·1	88·9	93·5	95·4	88·5
Mean min., °F.	74·2	74·7	73·5	67·1	60·3	54·5	51·5	53·5	56·8	61·0	66·3	70·5	63·7
Highest max., °F.	117·8	119·0	115·6	110·9	101·0	90·0	90·2	95·6	101·0	112·2	115·0	117·5	119·0
Lowest min., °F.	60·5	61·9	58·4	50·0	42·0	37·3	37·5	40·0	41·9	45·4	50·0	49·0	37·3
Number of days 90° and over	25·8	24·1	27·8	16·7	2·8	0·1	0·0	0·8	5·2	13·3	19·1	25·2	160·9
Number of days 100° and over	9·1	7·0	8·8	1·5	0·0	0·0	0·0	0·0	0·2	2·0	5·7	9·8	44·1
Number of days 36° and under	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0
Carnarvon—													
Temperature :													
Mean max., °F.	87·2	88·1	86·9	84·4	78·3	73·7	71·7	73·1	75·4	77·4	81·4	84·2	80·2
Mean min., °F.	72·1	72·4	71·6	65·8	58·8	54·0	51·6	53·4	57·2	61·1	65·8	69·2	62·7
Highest max., °F.	117·8	115·2	112·8	105·9	100·4	90·2	86·8	90·2	97·8	108·3	109·1	113·0	117·8
Lowest min., °F.	58·0	61·2	56·8	47·0	42·8	37·0	37·0	38·3	42·0	45·5	50·4	54·6	37·0
Number of days 90° and over	8·0	9·8	11·3	7·0	0·4	0·0	0·0	0·1	0·9	2·1	2·5	3·6	45·7
Number of days 100° and over	3·4	3·8	3·7	1·3	0·0	0·0	0·0	0·0	0·0	0·4	0·5	0·9	14·0
Number of days 36° and under	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0
Geraldton—													
Temperature :													
Mean max., °F.	84·5	85·2	83·6	80·5	74·2	69·7	67·7	68·8	71·4	73·6	78·5	82·0	76·6
Mean min., °F.	66·3	66·5	65·0	60·9	56·9	53·8	51·7	52·1	53·0	55·4	60·0	63·4	58·7
Highest max., °F.	117·9	115·5	110·8	103·0	94·7	83·8	81·9	88·9	96·5	104·6	108·8	113·0	117·9
Lowest min., °F.	48·0	51·0	47·0	41·8	38·6	33·5	33·4	35·1	35·3	37·9	42·0	45·8	33·4
Number of days 90° and over	8·2	9·8	9·8	3·9	1·1	0·0	0·0	0·0	0·1	1·3	4·9	5·0	44·1
Number of days 100° and over	3·4	3·5	2·1	0·3	0·0	0·0	0·0	0·0	0·0	0·1	0·9	1·8	12·1
Number of days 36° and under	0·0	0·0	0·0	0·0	0·0	0·2	0·1	0·0	0·1	0·0	0·0	0·0	0·4
Perth (Observatory)—													
Temperature :													
Mean max., °F.	84·6	85·3	81·8	76·3	69·0	64·4	62·9	64·0	66·7	69·6	75·9	81·2	73·5
Mean min., °F.	63·2	63·6	61·4	57·3	52·6	49·7	48·0	48·3	50·1	52·4	56·7	60·5	55·3
Highest max., °F.	110·7	112·2	106·4	99·7	90·4	81·7	76·4	82·0	90·9	95·3	104·6	107·9	112·2
Lowest min., °F.	48·6	47·7	45·8	39·3	34·3	34·9	34·2	35·4	36·7	40·0	42·0	47·5	34·2
Number of days 90° and over	8·8	8·2	5·5	1·2	0·0	0·0	0·0	0·0	0·0	0·3	2·2	5·6	31·8
Number of days 100° and over	1·5	1·8	0·7	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·1	0·8	5·0
Number of days 36° and under	0·0	0·0	0·0	0·0	0·0	0·1	0·1	0·0	0·0	0·0	0·0	0·0	0·2
Bunbury—													
Temperature :													
Mean max., °F.	82·1	81·9	78·9	74·4	68·1	64·1	62·5	63·1	65·5	68·1	74·4	78·9	71·8
Mean min., °F.	59·1	59·1	57·1	53·6	50·8	48·6	47·1	47·4	48·8	50·4	54·0	56·8	52·7
Highest max., °F.	106·2	104·2	99·0	93·0	83·7	77·2	72·2	75·5	83·8	92·5	99·8	101·5	106·2
Lowest min., °F.	43·2	41·3	39·3	36·7	32·1	33·0	28·0	33·0	30·0	33·0	39·2	38·4	28·0
Number of days 90° and over	4·2	3·2	1·6	0·1	0·0	0·0	0·0	0·0	0·0	0·0	0·3	1·1	10·5
Number of days 100° and over	0·1	0·2	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·3
Number of days 36° and under	0·0	0·0	0·0	0·0	0·1	0·4	0·3	0·2	0·3	0·3	0·0	0·0	1·6

TEMPERATURES AT REPRESENTATIVE CLIMATOLOGICAL STATIONS—*continued*

Reporting Station and Characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
COASTAL—*continued*													
Albany—													
Temperature :													
Mean max., °F.	73·8	74·2	72·3	70·3	65·9	62·2	60·9	61·7	63·6	65·7	69·2	72·0	67·6
Mean min., °F.	58·5	58·8	57·5	54·5	50·7	47·8	46·3	46·6	48·3	50·0	53·6	56·5	52·4
Highest max., °F.	107·0	112·6	105·4	99·9	95·3	76·2	73·5	81·0	87·0	97·2	106·0	106·0	112·6
Lowest min., °F.	42·3	41·0	38·7	39·5	35·1	35·0	32·2	34·3	34·0	36·2	40·6	41·2	32·2
Number of days 90° and over	0·8	0·3	0·9	0·6	0·0	0·0	0·0	0·0	0·0	0·1	0·4	0·9	4·0
Number of days 100° and over	0·3	0·0	0·1	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·2	0·6
Number of days 36° and under	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0
WHEAT BELT													
Carnamah—													
Temperature :													
Mean max., °F.	95·7	95·5	89·4	82·3	72·2	67·2	64·2	67·0	71·6	77·9	85·3	90·8	79·9
Mean min., °F.	63·5	63·7	60·5	56·0	49·7	47·3	44·7	44·6	45·5	49·4	54·6	59·2	53·2
Highest max., °F.	114·0	114·0	111·0	102·0	91·0	82·0	82·0	85·0	95·1	104·0	106·4	111·0	114·0
Lowest min., °F.	41·1	48·0	44·0	35·0	35·0	32·0	33·0	34·3	33·9	34·0	39·0	44·0	32·0
Number of days 90° and over	23·8	22·2	18·7	6·5	0·0	0·0	0·0	0·0	0·6	3·5	8·8	16·8	100·9
Number of days 100° and over	12·2	9·4	4·5	0·0	0·0	0·0	0·0	0·0	0·0	0·1	1·3	5·9	33·4
Number of days 36° and under	0·0	0·0	0·0	0·0	0·1	0·5	0·8	0·8	0·3	0·0	0·0	0·0	2·5
Wongan Hills—													
Temperature :													
Mean max., °F.	92·7	90·4	87·9	78·4	67·2	62·4	60·4	61·9	68·6	73·5	80·2	85·6	75·7
Mean min., °F.	63·1	62·9	61·1	55·5	48·5	45·2	41·8	41·7	45·6	47·9	52·0	57·1	51·9
Highest max., °F.	112·0	109·6	108·5	98·6	89·2	74·2	76·3	79·6	87·8	99·1	101·4	111·6	112·0
Lowest min., °F.	47·9	49·3	45·4	37·1	35·5	33·0	32·2	31·5	32·3	37·3	39·7	41·5	31·5
Number of days 90° and over	18·3	15·5	14·5	2·7	0·0	0·0	0·0	0·0	0·0	1·0	5·2	10·7	67·9
Number of days 100° and over	6·7	4·0	1·3	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·2	1·7	13·9
Number of days 36° and under	0·0	0·0	0·0	0·0	0·2	0·8	2·5	2·7	1·1	0·0	0·0	0·0	7·3
Kellerberrin—													
Temperature :													
Mean max., °F.	93·0	92·3	86·4	79·1	69·3	63·4	61·3	64·0	70·2	76·1	85·0	90·5	77·5
Mean min., °F.	61·6	61·4	58·8	52·2	46·5	43·6	41·5	41·9	43·8	47·8	54·5	58·8	51·0
Highest max., °F.	115·0	116·0	112·0	102·6	96·0	80·4	76·0	82·6	93·1	103·0	109·5	113·0	116·0
Lowest min., °F.	45·0	43·0	40·7	34·0	28·0	26·5	26·0	27·6	30·0	32·5	39·0	42·0	26·0
Number of days 90° and over	19·9	16·7	11·3	2·7	0·2	0·0	0·0	0·0	0·2	1·8	8·5	15·0	76·3
Number of days 100° and over	6·9	5·5	1·8	0·1	0·0	0·0	0·0	0·0	0·0	0·1	1·4	4·6	20·4
Number of days 36° and under	0·0	0·0	0·0	0·1	2·4	4·6	7·4	7·0	3·4	0·6	0·0	0·0	25·5
Wandering—													
Temperature :													
Mean max., °F.	88·3	87·6	82·0	74·9	65·9	60·5	59·2	60·5	64·9	69·6	78·9	84·9	73·1
Mean min., °F.	56·5	55·9	53·6	47·5	43·6	40·5	39·0	39·3	41·4	43·8	48·9	53·5	47·0
Highest max., °F.	111·5	110·8	107·5	97·0	87·0	77·0	71·8	79·0	86·0	98·5	103·5	109·0	111·5
Lowest min., °F.	38·0	37·0	30·9	28·0	26·0	25·0	24·0	25·0	27·0	28·0	30·5	35·0	24·0
Number of days 90° and over	15·2	12·0	9·3	1·3	0·0	0·0	0·0	0·0	0·0	0·4	2·3	7·4	47·9
Number of days 100° and over	3·7	2·4	0·5	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·1	1·3	8·0
Number of days 36° and under	0·0	0·0	0·0	1·3	7·9	9·8	9·9	9·5	9·4	5·3	1·0	0·3	54·4
Katanning—													
Temperature :													
Mean max., °F.	86·0	85·1	79·3	73·2	64·7	59·7	57·9	59·5	64·1	68·8	77·6	82·8	71·6
Mean min., °F.	56·3	56·5	54·7	50·4	46·5	43·6	41·9	42·0	43·7	45·7	50·2	53·8	48·8
Highest max., °F.	110·9	112·3	107·0	96·2	88·4	75·3	71·0	88·0	87·0	100·0	106·0	110·0	112·3
Lowest min., °F.	41·0	37·9	35·0	33·0	30·0	28·3	25·0	28·1	29·8	31·0	35·0	37·6	25·0
Number of days 90° and over	12·3	7·5	5·3	1·1	0·0	0·0	0·0	0·0	0·0	0·3	2·0	5·9	34·4
Number of days 100° and over	2·6	1·4	0·3	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·9	5·2
Number of days 36° and under	0·0	0·0	0·0	0·2	1·8	3·6	4·4	4·5	2·8	1·1	0·2	0·0	18·6
OTHER INLAND													
Halls Creek—													
Temperature :													
Mean max., °F.	97·6	97·0	95·6	92·3	85·7	80·6	80·1	85·9	92·7	98·3	100·5	99·5	92·2
Mean min., °F.	75·4	74·2	71·2	63·0	56·0	50·5	47·6	52·1	59·0	69·5	74·2	75·5	64·0
Highest max., °F.	111·8	110·8	107·6	103·8	99·0	95·0	93·2	100·0	104·3	110·8	110·8	111·6	111·8
Lowest min., °F.	60·0	54·0	51·8	45·0	36·4	32·4	30·0	32·8	37·4	48·0	53·0	53·8	30·0
Number of days 90° and over	28·5	24·8	29·1	22·7	9·5	0·8	1·3	7·3	23·2	29·2	29·7	29·0	235·1
Number of days 100° and over	17·8	8·5	9·6	1·6	0·0	0·0	0·0	0·0	0·7	12·7	17·6	19·2	87·7
Number of days 36° and under	0·0	0·0	0·0	0·0	0·0	0·3	0·8	0·0	0·0	0·0	0·0	0·0	1·1
Marble Bar—													
Temperature :													
Mean max., °F.	106·2	105·5	102·9	97·0	88·0	80·9	80·6	85·8	93·8	100·1	105·9	107·5	96·2
Mean min., °F.	78·9	78·6	76·8	69·5	61·3	54·7	52·4	55·7	61·7	68·7	75·2	78·1	67·6
Highest max., °F.	120·5	119·0	116·0	113·0	103·0	93·0	95·0	99·0	108·7	113·9	117·0	119·0	120·5
Lowest min., °F.	66·0	57·0	59·6	52·0	42·0	34·0	36·0	39·0	42·0	50·0	58·0	63·0	34·0
Number of days 90° and over	30·3	26·5	28·8	26·0	10·1	0·5	0·8	7·3	22·6	26·3	30·0	30·5	239·7
Number of days 100° and over	27·9	22·1	18·9	8·8	0·2	0·0	0·0	0·0	2·0	12·6	24·2	28·7	145·4
Number of days 36° and under	0·0	0·0	0·0	0·0	0·0	0·0	0·2	0·8	0·0	0·0	0·0	0·0	1·0

TEMPERATURES AT REPRESENTATIVE CLIMATOLOGICAL STATIONS—*continued*

Reporting Station and Characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
OTHER INLAND—*continued*													
Mundiwindi—													
Temperature :													
Mean max., °F.	100·5	98·7	94·0	86·7	77·7	70·4	70·0	74·6	83·2	89·4	96·2	99·8	86·8
Mean min., °F.	73·6	72·7	69·0	60·3	51·2	43·4	41·4	45·0	51·3	58·6	66·7	71·2	58·7
Highest max., °F.	112·2	112·0	108·2	105·0	97·6	85·7	87·0	99·2	99·0	105·2	110·0	112·0	112·2
Lowest min., °F.	57·0	55·0	49·0	39·0	28·9	24·0	22·4	25·5	29·0	37·9	46·0	53·0	22·4
Number of days 90° and over	29·3	25·3	25·4	11·6	0·6	0·0	0·0	0·4	5·6	15·9	25·3	29·1	168·5
Number of days 100° and over	20·3	15·7	10·2	0·2	0·0	0·0	0·0	0·0	0·0	1·3	9·8	19·9	77·4
Number of days 36° and under	0·0	0·0	0·0	0·0	0·6	5·6	7·3	3·7	0·2	0·0	0·0	0·0	17·4
Meekatharra—													
Temperature :													
Mean max., °F.	100·4	99·7	93·9	85·7	76·0	68·6	67·5	71·2	78·6	84·8	92·9	98·2	84·8
Mean min., °F.	73·1	73·1	69·4	61·0	52·5	46·3	44·0	46·5	51·0	56·9	64·7	70·0	59·0
Highest max., °F.	113·0	114·1	110·4	104·2	94·4	85·0	81·7	90·7	97·0	103·0	109·1	110·6	114·1
Lowest min., °F.	54·0	54·1	52·2	46·0	33·0	26·4	31·6	34·0	34·0	40·2	43·0	51·9	26·4
Number of days 90° and over	28·8	24·3	21·7	9·8	0·3	0·0	0·0	0·1	1·8	8·3	17·9	25·6	138·6
Number of days 100° and over	18·6	13·7	6·2	0·3	0·0	0·0	0·0	0·0	0·0	0·4	3·5	10·6	53·3
Number of days 36° and under	0·0	0·0	0·0	0·0	0·2	0·9	1·3	0·1	0·0	0·0	0·0	0·0	2·5
Collie—													
Temperature :													
Mean max., °F.	86·4	85·7	80·4	74·3	65·9	61·3	59·8	61·0	64·8	68·8	77·2	83·0	72·4
Mean min., °F.	55·6	54·9	52·5	47·1	42·9	40·4	39·1	39·8	42·5	45·3	49·7	53·1	46·9
Highest max., °F.	112·0	110·2	105·4	98·0	86·8	76·0	73·0	79·0	86·6	96·4	101·8	106·2	112·0
Lowest min., °F.	37·7	35·2	32·3	29·6	28·0	24·8	25·0	26·2	28·0	31·0	32·6	35·0	24·8
Number of days 90° and over	13·0	11·3	8·0	1·2	0·0	0·0	0·0	0·0	0·0	0·3	2·1	5·7	41·6
Number of days 100° and over	2·2	1·4	0·7	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·1	1·1	5·5
Number of days 36° and under	0·0	0·0	0·1	0·8	5·3	7·8	7·9	6·6	5·9	1·8	0·3	0·1	36·6
Manjimup—													
Temperature :													
Mean max., °F.	78·3	79·4	74·8	69·5	62·8	59·3	57·4	58·7	61·4	64·7	71·0	75·3	67·7
Mean min., °F.	53·7	54·0	53·0	50·5	46·5	44·5	42·5	43·0	43·7	46·2	49·3	51·8	48·2
Highest max., °F.	107·0	105·0	102·0	92·0	81·0	72·0	71·0	76·4	82·0	88·0	98·2	100·0	107·0
Lowest min., °F.	42·0	40·0	40·0	35·0	34·0	33·0	27·0	30·0	31·0	33·0	35·0	40·0	27·0
Number of days 90° and over	5·7	4·3	3·3	0·5	0·0	0·0	0·0	0·0	0·0	0·0	0·3	2·0	16·1
Number of days 100° and over	0·3	0·1	0·2	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·1	0·7
Number of days 36° and under	0·0	0·0	0·0	0·1	0·5	1·3	2·3	3·2	2·1	0·1	0·0	0·0	9·6
Kalgoorlie—													
Temperature :													
Mean max., °F.	93·2	93·0	86·3	78·4	70·1	63·6	62·5	66·0	73·6	79·0	86·3	91·1	78·6
Mean min., °F.	64·2	64·4	61·3	55·2	48·9	44·6	42·9	43·9	48·2	52·7	58·3	62·3	53·9
Highest max., °F.	114·4	115·0	111·0	102·5	92·0	81·8	81·0	87·0	96·0	105·2	110·6	113·0	115·0
Lowest min., °F.	47·1	48·0	41·6	35·0	32·0	29·5	26·0	27·7	30·9	30·2	38·2	45·5	26·0
Number of days 90° and over	18·8	12·9	10·8	2·9	0·1	0·0	0·0	0·0	0·4	2·9	7·4	14·8	71·0
Number of days 100° and over	7·5	4·3	2·7	0·3	0·0	0·0	0·0	0·0	0·0	0·1	1·3	3·9	20·1
Number of days 36° and under	0·0	0·0	0·0	0·1	0·3	1·8	3·9	3·6	0·3	0·0	0·0	0·0	10·0
Rawlinna—													
Temperature :													
Mean max., °F.	90·0	89·8	84·4	78·0	71·2	65·3	64·2	67·3	74·4	79·0	84·4	88·8	78·1
Mean min., °F.	58·9	59·2	57·8	52·2	46·4	41·6	39·3	41·1	45·3	49·4	54·2	57·6	50·2
Highest max., °F.	118·0	115·5	112·0	104·0	95·0	84·0	85·0	93·0	102·7	107·0	112·2	114·3	118·0
Lowest min., °F.	42·0	41·0	42·9	37·0	32·0	29·2	27·8	27·2	31·6	33·2	36·4	41·2	27·2
Number of days 90° and over	14·8	10·8	10·3	2·8	0·5	0·0	0·0	0·0	1·7	3·6	7·9	13·3	65·7
Number of days 100° and over	6·8	3·5	3·2	0·2	0·0	0·0	0·0	0·0	0·1	0·8	2·5	5·7	22·8
Number of days 36° and under	0·0	0·0	0·0	0·0	1·2	3·5	5·3	4·4	0·8	0·2	0·0	0·0	15·4

SNOW

Snow has been known to fall as far north as Wongan Hills, but it is only in the southern districts that it occasionally lies on the ground. It is seen on the top of the Stirling Range for a short time nearly every winter, but elsewhere is very infrequent and of negligible importance.

METROPOLITAN CLIMATE

Perth has more sunshine and a greater number of clear days during the year than any other State capital city. It also has the wettest winter, the driest summer, and is the windiest of the capital cities. Details of its climate are shown in the second table on page 57.

INTERSTATE COMPARISONS—RAINFALL, HUMIDITY, TEMPERATURE

Reporting Station	Height above mean sea-level	Average Rainfall		Relative Humidity (a)		Average Daily Mean Temperature	
		May to October	November to April	May to October	November to April	May to October	November to April
	feet	inches	inches	%	%	°F.	°F.
Bunbury	17	29·96	5·01	77	70	57·0	67·5
Sydney, New South Wales	138	21·53	23·27	66	69	58·2	69·3
Perth	197	30·24	4·80	69	55	58·2	70·8
Newcastle, New South Wales	112	20·56	20·80	70	74	58·7	69·7
Kalgoorlie	1,247	5·16	4·53	58	48	58·0	74·5
Cobar, New South Wales	822	5·88	6·73	59	46	56·3	75·2
Geraldton	13	16·04	2·39	67	62	62·3	73·0
Brisbane, Queensland	137	12·01	28·08	66	69	63·3	74·7
Wiluna	1,700	3·21	6·59	50	35	60·4	80·9
Charleville, Queensland	965	6·19	11·78	55	46	61·1	79·5
Carnarvon	15	6·48	2·60	63	63	65·5	77·4
Bundaberg, Queensland	45	10·86	31·51	73	74	64·5	75·7
Mundiwindi	1,840	2·74	8·28	39	30	63·0	82·4
Longreach, Queensland	612	3·92	11·62	50	50	65·7	82·3
Onslow	14	4·45	4·88	55	56	69·3	82·9
Mackay, Queensland	35	11·49	51·67	78	80	66·8	77·7
Port Hedland	25	3·33	9·23	50	59	72·6	85·3
Townsville, Queensland	73	5·49	37·57	66	73	71·7	80·3
Derby	53	1·67	23·78	51	65	76·9	86·5
Innisfail, Queensland	22	35·88	103·27	85	85	69·7	78·1
Wyndham	23	1·13	25·51	43	59	80·9	88·0
Cooktown, Queensland	17	8·08	59·79	76	78	75·1	81·1
Albany	41	28·75	8·87	76	73	55·8	64·3
Adelaide, South Australia	140	14·42	6·67	64	45	56·5	69·6
Swan Hill, Victoria	230	7·88	5·21	70	54	53·4	69·8
Canberra, Australian Capital Territory	1,837	11·85	11·45	72	61	47·5	64·0

(a) Saturation = 100%.

CLIMATOLOGICAL DATA—PERTH OBSERVATORY

(For other data relating to Temperature and Rainfall see preceding tables)

Month	Wind				Temperature				Relative Humidity (Saturation = 100%)		Sunshine	Cloud (Proportion of Sky Covered)	Evaporation
	Prevailing Direction		Speed		Highest in Sun		Lowest Terrestrial		Mean	At 3 p.m.	Mean Daily Amount	Mean of readings at 9 a.m., 3 p.m. and 9 p.m.	Mean Amount
	9 a.m.	3 p.m.	Average	Highest									
Number of years of observations	30 (a)		30 (a)	49	61		63		30 (a)		30 (a)	30 (a)	30 (a)
			m.p.h.	m.p.h.	°F.	Date	°F.	Date	%	%	hours	%	inches
January	E.	S.S.W.	10·9	48	177·3	22/1914	39·5	20/1925	53	43	10·4	29	10·37
February	E.N.E.	S.S.W.	10·7	54	173·7	4/1934	39·8	1/1913	52	43	9·8	31	8·63
March	E.	S.S.W.	10·1	70	167·0	19/1918	36·7	8/1903	57	46	8·8	35	7·52
April	E.N.E.	S.S.W.	8·5	63	157·0	8/1916	31·0	20/1914	60	48	7·5	42	4·62
May	N.E.	W.S.W.	8·4	68	146·0	4/1925	25·3	11/1914	68	58	5·7	54	2·80
June	N.	N.W.	8·4	80	135·5	9/1914	25·9	27/1946	72	63	4·8	59	1·82
July	N.N.E.	W.	8·8	77	133·2	13/1915	25·1	30/1920	73	63	5·4	56	1·76
August	N.	W.N.W.	9·4	78	145·1	29/1921	26·7	24/1935	71	60	6·0	56	2·37
September	E.N.E.	S.S.W.	9·4	68	153·6	29/1916	27·2	(b)	64	57	7·2	49	3·44
October	S.E.	S.W.	10·0	65	161·2	19/1954	29·8	16/1931	64	54	8·1	48	5·38
November	E.	S.W.	10·7	63	167·0	30/1925	35·0	3/1947	57	47	9·6	39	7·65
December	E.	S.S.W.	11·0	64	168·8	11/1927	38·0	29/1957	54	46	10·4	32	9·69
Year—													
Average	E.	S.S.W	9·7						62	52	7·8	44	
Extremes				80	177·3	22/1/14	25·1	30/7/20					
Total													66·05

(a) Standard 30 years' normal (1911–1940). (b) Recorded on 8th September, 1952 and 6th September, 1956.

CHAPTER II — *continued*

PART 3 – THE VEGETATION OF WESTERN AUSTRALIA

(Contributed by R. D. Royce, Curator, Western Australian State Herbarium)†

The flora of Western Australia comprises over 6,500 Angiosperms, some fifty ferns and over four hundred marine algae, as well as many mosses, lichens and liverworts which have never been completely listed.

It is one of the most interesting floras of the world, due very largely to its high degree of endemism, *i.e.* the large number of species which are entirely restricted to the region. This is especially noticeable in the South-West Vegetation Province, which extends from Shark Bay at its northern extremity to Israelite Bay on the south coast and has an eastern boundary approximating closely to the 10 in. isohyet.

This area has been aptly described as the cradle of the Western Australian flora since it comprises that part of the State which has been for the longest period exposed above the level of the sea, and where the flora has thus had the longest period in which to develop. The area has for an immeasurably long time been isolated by expanses of ocean to the north, west and south and by a desert area to the east which stretches from the Eighty Mile Beach in the north-west to the Great Australian Bight in the south-east. Protected thus from continued invasion of elements from alien floras, the indigenous plants have been able to evolve in a peaceful environment such as few present-day continental areas have probably ever experienced. This has resulted in a flora which has been produced by a long period of natural selection, and is now highly specialized to suit its own peculiar environment.

It has been estimated that the endemism of the South-West flora is as high as 75 per cent. When compared with island floras, this may not, of course, appear to be a very impressive total. The Hawaiian Islands for instance record an endemism of 90 per cent. and more, but the number of species and the actual area of land involved are not very great. When considered as a portion of a continent, however, the figure for the South-West flora is a particularly high one and is possibly exceeded only by the Cape Province of South Africa and some areas of the South American continent.

Despite this high percentage of endemism among its species, and the consequent great interest centred around the Western Australian flora, it is not to be regarded as being completely different or highly individual when considered from the standpoint of its larger groups. At the generic level, the western flora is remarkably similar to that of eastern Australia, while the plant families in Australia as a whole are, with only two exceptions, well represented in other countries.

Speaking of the Australian flora as a whole in his *Introduction to the Flora of Tasmania* (1859), J. D. Hooker states: "It contains more genera and species peculiar to its own areas, and fewer plants belonging to other parts of the world, than any country of equal extent. About two-fifths of its genera, and upwards of seven-eights of its species, are entirely confined to Australia. On the other hand, if, disregarding the peculiarities of the flora, I compare its elements with those of the floras of similarly situated large areas of land, or with that of the whole globe, I find that there is so great an agreement between these that it is impossible to regard the Australian vegetation in any other light than as forming a peculiar but not an aberrant or anomalous botanical province of the existing Vegetable Kingdom; that with only two small exceptions, the Australian families are also found in other countries; that most of those most widely diffused in Australia are such as are also the most widely distributed over the globe; and that Australia wants no known family of general vegetation. Turning again to other countries which are remarkable for the peculiarity of their vegetation, I find that South America contains many more peculiar families than Australia, and South Africa about as many".

In Western Australia there is only one truly endemic family, the Cephalotaceae, a family which consists of only one species, the Albany Pitcher Plant, *Cephalotus follicularis*. This remarkable plant, with leaves closely resembling those of the insect-trapping *Nepenthes* of tropical Asia, is found in sandy soils in and around low-lying swampy areas along the south coast as far east as Mount Many Peaks and extending northwards to the Blackwood and Margaret Rivers.

The other families in Western Australia are represented either in eastern Australia or in countries overseas. In a great many of these families, however, the degree of speciation is very much greater in the South-West than in other areas of their occurrence. This raises an interesting point connected with the

†Based on the text on the same subject written by C. A. Gardner, formerly Government Botanist, and published in earlier issues of the *Official Year Book of Western Australia*.—R. D. R.

origin of the State's flora, since this large number of species could have arisen under two very different circumstances. Either the ancestors of the present flora evolved on the ancient land mass of the south and, after centuries of intense speciation, gradually spread into other countries thus developing their present distribution patterns or, on the other hand, the ancestral plants may have originated outside of the present Australian continent, and the development of species may then have followed the migration of primitive forms into Australia where conditions were suited to a vigorous speciation. The large number of species in individual families may therefore denote either an ancient and truly ancestral group, or it may indicate a very successful but younger migrant family.

The Proteaceae, or Banksia family, can be taken as an example of the ancient Australian type, and is one of the families which Diels included in his Southern Element of the Western Australian flora. Of the 54 genera of this family, 23 are confined to Australia, and seven of these are endemic in the south-west corner of Western Australia. The two largest genera in the family, *Grevillea* (180 species) and *Hakea* (100 species) are totally restricted to Australia, as are the other large genera *Dryandra* (52), *Banksia* (50) as well as *Petrophila*, *Isopogon* and *Conospermum*. *Dryandra*, *Petrophila* and *Isopogon* are endemic in the south-west of Western Australia, while a large majority of the species of the other four genera are also to be found in this State.

The Proteaceae of South Africa are represented by 12 endemic genera and two others with representatives outside of South Africa. The largest of these, *Protea*, a genus of some 80 species, is perhaps the most spectacular in the family with the possible exception of *Banksia*. Other genera in the South African flora are *Leucondendron* (70 species), *Serruria* (50) and *Leucospermum* (40). The remaining 17 genera of the Proteaceae are widely distributed in South America (six represented), New Caledonia, Madagascar, Japan and Indo-Malaya.

Of the 77 species in nine genera included in the Persoonioideae, the most primitive of the subfamilies of the Proteaceae, some 67 species and six genera are confined to Australia, while the other representatives are found in South Africa, New Caledonia and Madagascar. Thus with its most primitive present-day forms entirely restricted to the southern continents, the Proteaceae must obviously have had its origins in the south, and from here it has exhibited active speciation particularly in south-western Australia and South Africa, later extending to other countries and even as far afield as the tropical regions.

On the other hand the family Mimosaceae may be taken as an example of a family which has originated outside of Australia but which has developed a great variety of species within this country, and this is particularly true of its largest genus *Acacia*. There are over five hundred species of this genus usually referred to collectively as Wattles, and they are widely distributed over the warmer regions of the world. As may be expected, they assume a great variety of forms ranging from large feathery-leaved trees, to small twiggy or leafless subshrubs. Since the germinating *Acacia* seed almost invariably produces a much divided or feathery leaf, the retention of this type of foliage right to maturity is taken as denoting the primitive form. These primitive or ancestral species are found predominating in the tropical regions, and the genus must therefore be taken as having originated in these areas. A typical example of this type of plant is *Acacia farnesiana*, a species which has a particularly wide distribution and which occurs in most tropical areas including America, Africa, the countries of the Middle East, India and northern Australia.

In Western Australia it occurs throughout the Kimberley region together with three related species, and is particularly abundant in the Fitzroy basin. In some areas it is apparently spreading at the expense of other, more palatable, native plants which are being heavily grazed by cattle. From the Kimberley region *A. farnesiana* extends southwards through the Hamersley Range and as far as the Murchison River, but its further progress southwards towards the agricultural areas has been prevented by the virtual absence of summer rains.

To the south of the Murchison River its place is taken by another of the feathery-leaved or bipinnate group of *Acacia*, namely *A. pulchella*, which is found throughout the southern half of the State, and particularly in the forest areas. Under these temperate conditions the southern representatives of the bipinnate wattles are well developed, and some twelve species are to be found there. The most interesting species is *Acacia insolita* which normally carries both bipinnate leaves and modified leaf stalks or phyllodes such as have been developed by the majority of the Australian wattles. By the suppression of the feathery leaflets and the modification of the leaf stalk into a flattened structure to function as the leaf, the species of *Acacia* have been able to withstand a much more severe environment and have penetrated into the arid deserts of the centre of the continent. The genus plays a conspicuous part in most of the floral associations of the State and, of the four hundred Australian species, some three-quarters are recorded for Western Australia.

Thus the wattles, from their origins as bipinnate shrubs in tropical areas, have migrated southwards, developing in the first instance a type which was able to flourish under temperate conditions, and then in the arid climate of parts of Australia, these forms became modified by the complete suppression of the true leaf and the development of the phyllode. In the arid heart of the continent the genus has been able to produce a multitude of species, the sum total of which is probably not yet known since vast areas of the interior still remain to be explored botanically. It is evident therefore that the large number of species of *Acacia* in Australia have been developed within this country, but were derived from original forms which migrated into Australia from the north.

Many other families in the flora demonstrate this speciation just as strongly. Principal among them are Myrtaceae, Goodeniaceae, Papilionaceae and Restionaceae, all of which show a strong development of species in Western Australia as compared with other areas of their distribution, despite the fact that two are derived from southern ancestors, while the others have originated in tropical regions.

VEGETATION PROVINCES

It has been said that of all the factors which determine and control the vegetation of the earth, the climatic factor is the most important, and rainfall and temperature are the most important of the climatic elements. In Western Australia there are three distinct climatic regions. These are the tropical north with a short hot rainy period, the temperate south with a rainy period occurring in the coldest months, and the arid interior which has no regular rainfall pattern. The flora is remarkably different within these three areas which for this reason have been used as natural divisions of the flora. Diels referred to them as the Northern, the South-West and the Eremean Provinces.

The description of the climatic and vegetative characteristics of these Provinces contained in the following sections is by C. A. Gardner, formerly Government Botanist of Western Australia.

Climatic Characteristics

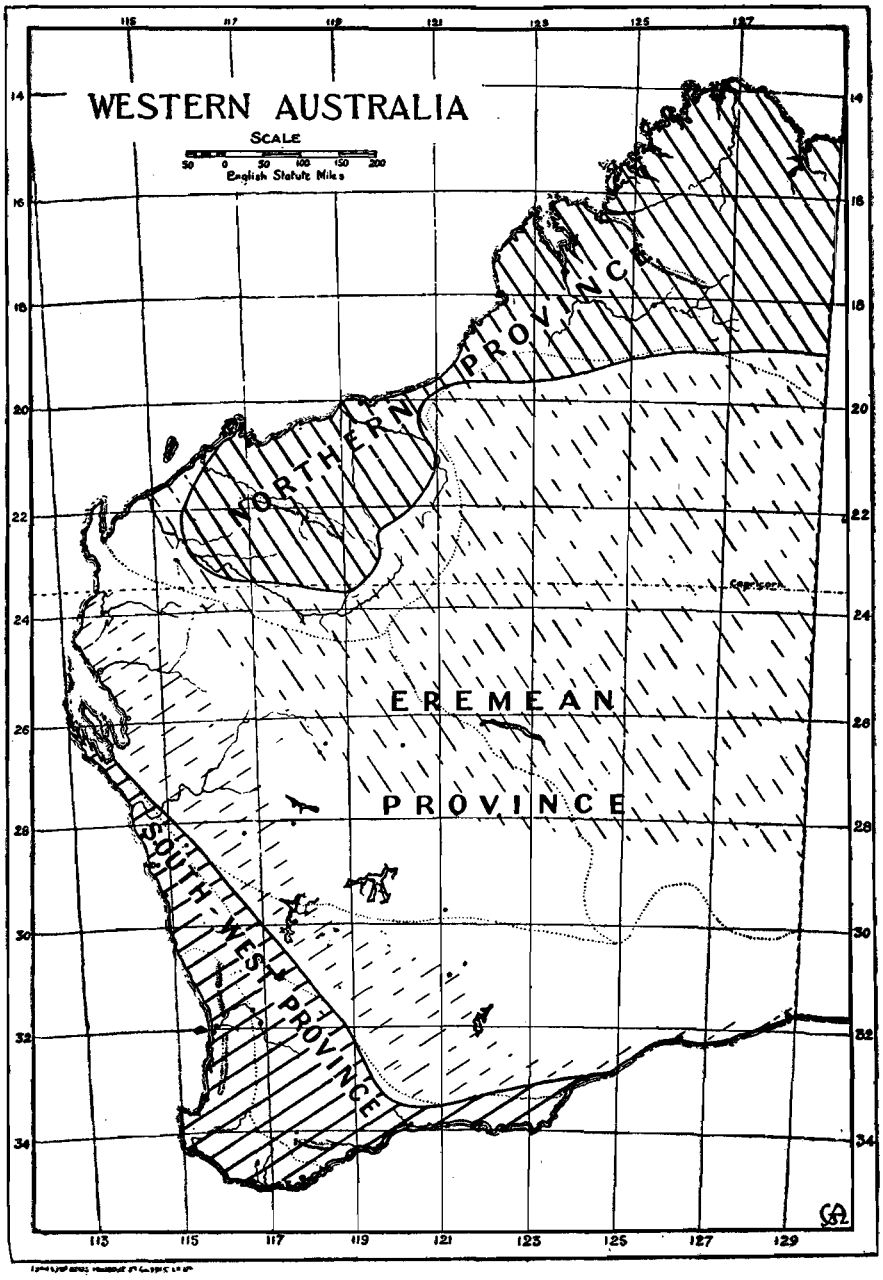
The *Northern Province* extends over the Kimberley Division to some few miles southwards from the Fitzroy River, thence contracting into a narrow coastal isthmus in the vicinity of the Eighty Mile Beach, and expanding southwards to include the De Grey River and the greater part of the Fortescue system. It is the area which, lying north of the Tropic of Capricorn, receives its rain entirely in the summer months, with a seasonal rainfall during the four wettest months ranging from about seven inches in its southern portions to over forty inches in parts of the Kimberley Division, and has an annual mean maximum temperature of 90° F. or over, although during the growing season temperatures may be even higher. The season from the commencement of April until the end of October is relatively rainless.

The *South-West Province* extends from the southern end of Shark Bay in the north to Israelite Bay in the south. On the west and southern sides it is bounded by the ocean, while its inland boundary passes close to Mullewa, Morawa, Koorda, Bencubbin, Burracoppin, Hyden, Ravensthorpe and Grass Patch. It is pre-eminently the winter rainfall province which receives its maximum rainfall from May to August inclusive and, with the exception of the southern portion, experiences a seasonal drought extending from November to March or April. The average maximum temperature is less than 80°F. with much lower temperatures during the growing season.

The *Eremean Province* lies between the Northern and the South-West Provinces, and occupies approximately two-thirds of the total area of the State of Western Australia. It is intermediate in character between the other two ; its rainfall is received either from extensions of summer rainfall southwards (and this makes up the greater portion, especially such rainfall as is received from tropical hurricanes during the late summer months), or in the south from extensions of the winter systems, while rarely a general rainfall may occur throughout.

Vegetative Characteristics

The *Northern Province* is essentially the savannah-steppe Province in that an herbaceous ground-covering mainly composed of grasses occurs. This varies from the rich grasslands of Kimberley to the harsh spinifex " steppe " of the country southwards from the Fitzroy, broken only by the alluvial grass-land plains of the De Grey and Fortescue districts, especially the Roebourne Plains. Scrubland as such is unknown, except to a very limited extent in the rough sandstone range country of north-west Kimberley. Forests as such do not occur and mulga too is absent. Floristically the Province is characterized by the part played by the " Indo-Melanesian Element " in its constitution. In places this element may predominate to the extent that amongst the trees *Eucalyptus* plays a secondary role, and deciduous trees are prominent. The grotesque Baobab is common, together with various soft-wooded trees, while



VEGETATION PROVINCES OF WESTERN AUSTRALIA

(From Jour. Roy. Soc. of West. Aust., vol. XXVIII page lxxxv, by courtesy of Roy. Soc. of West. Aust.)

the herbaceous growth is rich in members of the *Hibiscus* family and several others. With the exception of the river bank and swamp formations, most herbaceous growth is either dead or resting during the winter months.

The *South-West Province*, on the other hand, is characterized by a total absence of the Indo-Melanesian influence, and its flora bears a distinct southern or "Antarctic" impress. Trees and shrubs predominate with a marked diminution of grasses, and there is no true grassland. The herbaceous species are of winter growth, and the plants remain dormant during the dry summer months, especially the species of *Acacia* and Casuarinaceae. The Proteaceae, which assume a minor role in the North, here hold sway, as do the Myrtaceae and Leguminosae. The principal formations are forest woodland and scrub land, with extensive tracts of sand heath. Mulga and spinifex are absent and the various salt bushes either exist as inhabitants of the physiologically dry salt pans, or occur only marginally. There is a distinctive plant architecture among the woody plants in which the effect of the dry season is apparent.

The *Eremean Province* is again intermediate. Floristically it is characterized by the " Australian Element," recruited from northern and southern influences, and those hardy species which have arisen in response to an adverse environment. Notably there is an increase in the spacing of plants due to root competition between neighbours. The result is a series of "open formations" ; Mulga bush, consisting of leafless species of *Acacia* with resinous or stiff leaf-like phyllodes ; a predominance among the shrubs of species of *Acacia*, *Cassia* and the attractive species of *Eremophila*, notable for the size and colour of their blossoms. The Northern influence is expressed most strongly by the Spinifex (*Triodia*) which is the dominant tussocky grass of the lighter and stony soils, while the Mulga occupies the more closely-grained soils, the true mulga (*Acacia aneura*) being restricted to hard-pan soils. The Southern Element is most strongly asserted in the loose red sand and around granite rocks, the former carrying those sand-loving species for which the South-West is famous (even the Blackboy extends into the heart of the Eremea) while the species of the granite rocks owe their existence to an improvement in the water content of the soil in addition to the shelter and shade provided by declivities. In the northern portions of the Province we find, where watercourses provide permanent pools and moister conditions than elsewhere, an intrusion of the Northern Element, especially in the grasses and the herbaceous flora generally. Savannah and steppe occur in the north, Mulga and spinifex steppe occupy the middle areas, while in the south we have woodland formations, with some degree of heath development. The salt soils carry distinctive associations of salt-tolerant plants in which salt bushes are predominant, and this same formation occurs on the limestone soils of the Nullarbor Plain. Forests are absent.

VEGETATION FORMATIONS

Within the three large Vegetation Provinces plant species are grouped into associations which are basically dependent on soil type. The soil, within the limits of each rainfall zone, governs the amount of water available to the plants and influences the habit and character of the plant cover. Thus there are Forest Formations, Woodland Formations, Shrub Formations and many others.

The Forest Formations of the South-West

The Jarrah Forest—The most important of the forest formations of the South-West is that dominated by the Jarrah (*Eucalyptus marginata*), which reaches its greatest development in the lateritic soils from the Darling Scarp eastwards to the 20 in. isohyet, although it does occur also on the sandy coastal soils. Within the forest area Jarrah forms an almost pure stand, but along watercourses Blackbutt (*Eucalyptus patens*) is common, while Marri (*Eucalyptus calophylla*) is almost always present where sandy soils occur. In the richer soils of the valleys, Wandoo (*Eucalyptus redunca* var. *elata*) and Powder Bark Wandoo (*Eucalyptus accedens*) commonly occur, the latter being usually associated with granite outcrops. The understorey of the Jarrah forest consists principally of *Banksia* and the related *Persoonia*, *Hakea* and *Dryandra*, together with the Christmas Tree (*Nuytsia floribunda*), Sheoak (*Casuarina fraseriana*), Blackboy (*Xanthorrhoea preissii*) and Zamia (*Macrozamia reidlei*) in varying associations.

The Karri Forest—To the south of the Jarrah forest, in an area where the rainfall is heavier and more evenly distributed throughout the year, the Karri (*Eucalyptus diversicolor*) forms almost pure stands in certain light types of soil, mainly on the hillsides. Associated with it in the valleys is Bullich (*Eucalyptus megacarpa*), a tree which closely resembles Karri, while Jarrah and Marri occur where there are gravelly or sandy soils. The understorey consists of the Karri Sheoak (*Casuarina decussata*), Peppermint (*Agonis flexuosa*), Warren River Cedar (*Agonis juniperina*), Bull Banksia (*Banksia grandis*) and River Banksia

(*Banksia verticillata*). The shrubby components are Karri Wattle (*Acacia pentadenia*) and Hazel (*Trymalium spathulatum*) with *Hovea*, *Crowea* and *Boronia* providing masses of colour in the flowering season.

The Tingle Forest—Around the lower reaches of the Frankland River, the Karri trees are largely replaced by Red Tingle (*Eucalyptus jacksonii*) occurring mainly on the slopes and tops of hills, and Yellow Tingle (*Eucalyptus guilfoylei*) found mainly in the valleys and low situations generally. The associated vegetation is almost identical with that of the Karri forest.

The Wandoo Forest—There are few large areas of true Wandoo forest in the South-West, although the tree is widely distributed in the country to the north and east of the Jarrah belt. Where the Wandoo penetrates into the Jarrah forest it is associated with an understorey which, though closely resembling that of the Jarrah forest, lacks *Persoonia*, Sheoak and Christmas Tree. In the more open stands to the east, however, it is associated with a much reduced shrubby undergrowth, and frequently with Jam (*Acacia acuminata*). Within the Wandoo forest, the Mallet species *Eucalyptus astringens* and *E. gardneri* form dense associations on stony hillsides, while in the southern portion of the forest the Swamp Yate (*Eucalyptus occidentalis*) occurs freely on the low-lying country.

The Tuart Forest—The Tuart (*Eucalyptus gomphocephala*) occurs in a typical forest formation between Ludlow and Busselton where it is associated with Peppermint, species of *Banksia* and a large number of herbaceous species. The formation extends northwards as far as the Hill River and throughout its occurrence is restricted to limestone soils. To the north of Ludlow the forest gradually merges into a sparse woodland formation with an abundance of shrubby undergrowth and relatively few herbaceous species.

Woodland Formations

The Woodland formations differ from the forests of the South-West in being less uniform. Whereas the forest is invariably dominated by a single species, the woodland on the other hand consists of a series of co-dominant species which occupy relatively small areas in the intricate pattern which makes up the mozaic of the Woodland formation. The principal trees are the Salmon Gum (*Eucalyptus salmonophloia*), Gimlet (*Eucalyptus salubris*), Morrel (*Eucalyptus oleosa* var. *longicornis*) and Yorrel (*Eucalyptus gracilis*). Many other species are locally dominant and the undergrowth consists of species of *Acacia*, *Grevillea*, *Hakea* and mallee forms of *Eucalyptus*. This formation is chiefly South-Western, but it extends also into the Eremean Province where, although the tree species remain fairly constant, the undergrowth changes in character with an increasing number of the species of Poverty Bush (*Eremophila*), Saltbushes (*Atriplex*) and Bluebushes (*Kochia*).

Shrub Formations

The Mallee Eucalypts—The mallee form of *Eucalyptus* is found in many districts from the west coast to the South Australian border, and it is absent only from the forest areas of the South-West. Mallee thickets reach their greatest development in the alluvial soils, but they occur in almost any type of soil. In the lighter soils they frequently occur in association with other shrubs, particularly tea tree which at times actually dominates in a sandy habitat.

The Mulga Bush— The Mulga bush occupies a large part of the Eremean Province. This formation extends almost without interruption from the west coast between Onslow and the Wooramel River eastwards as far as New South Wales and, although its species may change, it maintains its character and identity throughout. The species of *Acacia* referred to as Mulga have a greyish resinous foliage and it is the dominance of these species, more than anything else, which gives the Mulga bush its character. Component shrubs are rather widely spaced. Another characteristic of the formation is its differential response to rain, a winter precipitation producing an immediate germination of vast numbers of annual and perennial herbs and shrubs, while summer rains promote a vigorous growth of grasses.

The Sand Heath— It is in the sand heath formation that the flora of the State displays the greatest number and diversity of its species, as well as the greatest development of colourful and interesting endemic forms. The most extensive sandplains are found at the northern and eastern extremities of the South-West Province, between Northampton and the Murchison River and from Ravensthorpe to Israelite Bay. They occur also on the eastern fringes of the South-West Province, and in the Eremean Province where important areas occur at Comet Vale and to the east and south of Southern Cross.

Savannah and Steppe Formations

Except for a weak development in Jam and York Gum (*Eucalyptus loxophleba*) country in the South-West, savannah and steppe formations are restricted to the Northern and Eremean Provinces where there are the necessary climatic conditions of summer rains alternating with a dry cool winter. On river flats the dominant species is the Coolabah (*Eucalyptus microtheca*) with a grass element consisting of species of *Sorghum* and Citronella Grass (*Cymbopogon* spp.) In the sandier soils Spinifex (*Triodia* spp.) is the dominant grass, while the tree layer consists of a number of bloodwoods and the Micum tree (*Eucalyptus brevifolia*). On the basalt soils the Grey Box (*Eucalyptus tectifica*) is associated with certain cabbage gums and Kangaroo grass (*Themeda australis*). An interesting type of open savannah occurs in coastal country between the De Grey and Fitzroy Rivers and is referred to as Pindan. In this formation, several species of *Acacia* are associated with a large number of grasses both annual and perennial although in recent years the introduced Buffel Grass (*Cenchrus ciliaris*) is dominating the grass cover.

Southward from the Fitzroy River is the large area of Spinifex steppe dominated by *Triodia*, where very few trees occur. The shrubs are mainly species of *Acacia* and *Cassia*. This formation gradually merges into the more open desert country of the interior, which is almost unknown botanically.

THE ECONOMIC VALUE OF THE FLORA

Although the flora of Western Australia is so large and diversified, relatively little industrial use has been made of many of its species, due principally to the fact that not enough is known about the chemical and other properties of the native plants. Species of obvious value are the timber trees, many of which are abundant in the South-West Province. Pre-eminent are the hardwoods jarrah and karri, large quantities of which are felled each year, with smaller amounts of many other species also being milled.

There is an established plywood industry, using local timbers. Among the cabinet woods are *Banksia*, *Casuarina* and Jarrah, the so-called "curly" jarrah in particular producing attractively-figured surfaces. In the tropical north of the State there are many excellent cabinet woods which have not yet been exploited. Principal among these are the ebony (*Maba humilis*), the Leichhardt tree (*Nauclea coadunata*) and the Red Ash (*Alphitonia excelsa*). In contrast to the hardwoods of the South-West a number of the Northern trees are soft-wooded, notable among them being the Yeelbar (*Erythrina vespertillio*) which is reputed to produce a timber almost as light and soft as balsa wood. This species has not yet been exploited and neither has the Kimberley Cypress Pine (*Callitris intratropica*) which is perhaps our most termite-resistant timber, due doubtless to its sandarac content. Large trees of the Kimberley Cypress Pine still exist in certain localities but they suffer severely from the effects of fire and whole forests of pine are sometimes destroyed by bush fires.

The early settlers in the south-west of the State used the bark of certain wattles, as well as the kino of the Marri (*Eucalyptus calophylla*), for tanning purposes but these generally ceased to be used when the bark of Brown Mallet (*Eucalyptus astringens*) was discovered to possess a greatly superior tannin. Even today mallet bark is still used to a certain extent for the production of hard leather, while wattle bark is used for the softer types. One of the best barks for tannin content and quality is that of the Micum tree (*Eucalyptus brevifolia*) which is found on the Hamersley Range, and also in the East Kimberley extending from the upper reaches of the Margaret River almost to Wyndham. Tanning materials are also extracted on a commercial scale from the timber and bark of the Wandoo tree. Several other chemical products are recovered from Wandoo in the wood-distillation plant associated with the charcoal-iron industry at Wundowie. The several species of Mangrove are also possible sources of tannin.

The Manna Wattle (*Acacia microbotrya*) yields a gum which has all the properties of gum arabic, but the yield per tree is very low and the gum "tears" are frequently stained by the tannins from the bark. The gum is nevertheless of commercial value. Attempts have also been made to exploit the common species of Blackboy (*Xanthorrhoea preissii*) and, although it yields large quantities of gum as well as drying oils, a turpentine substitute and acetic acid, there has been little interest in the exploitation of the large though rapidly diminishing supplies of this species.

Among the drug plants of the flora, special mention should be made of the many species of *Eucalyptus* which are rich in oils. No industry exists in Western Australia at present, despite the fact that in *Eucalyptus oleosa* var. *plenissima* this State has a variety which gives the highest yield of any known species. However, it would now be difficult to secure adequate areas of this valuable species, much of it having been destroyed in the expansion of agriculture. Several species of Citronella Grass (*Cymbopogon* spp.) occur freely in the



DONKEY ORCHID

Diuris longifolia R. Br.

Diuris longifolia is a common orchid of the south-west of Western Australia, occurring from the Geraldton district to east of Esperance. It is found also in other States. It flowers in winter and spring, and varies considerably in size and colour. The smaller forms, generally of a gold and brown colour, are the most common. Occasionally plants with pure yellow flowers are found. The larger forms have flowers of a rich purple and brown, often with gold markings. There are between thirty and forty species of *Diuris*, seven of which occur in Western Australia. The generic name is derived from the Greek and means "two tails," in reference to the narrow lateral sepals.

Kimberley, but the quality of the oil has not been investigated. Sandalwood oil is obtained from two species, *Santalum spicatum* and *Santalum lanceolatum*. The collection of sandalwood, formerly a profitable industry, has declined because the more readily accessible supplies have been virtually exhausted and natural regeneration is slow.

One of the strychnine trees (*Strychnos lucida*) is widely distributed in the tropical regions, and this species could have a potential value for the production of both strychnine and brucine. The small shrub *Grewia polygama*, known for its remarkable value as a remedy for dysentery, is also found there. Inquiries from foreign manufacturing firms have been received in the past for supplies of this plant. The Pituri (*Duboisia hopwoodii*) contains nicotine in very appreciable quantities and could be used for the production of insecticides. The species of *Tephrosia* and many other plants used by the aboriginal population as fish poisons are a relatively unknown group and await chemical investigation. The toxic principle of the many species of *Gastrolobium* and *Oxylobium* is also still unknown, although an intensive investigation is being carried out under the auspices of the Phytochemical and Toxic Plant Committee of the Western Australian Department of Agriculture. This Committee is also investigating the alkaloid content of the flora in an attempt to locate and identify all the potentially toxic as well as the potentially useful plants in the flora of the State.

The wildflowers of Western Australia are widely recognized as an important tourist attraction. Flowers for commercial purposes are taken mostly from the wild, and it is probable that as more and more land is cleared an increasingly profitable trade will become available to those who have them under cultivation. Large quantities of fresh wildflowers are sent to other States and overseas.

Among the wildflowers there is one, the Brown Boronia (*Boronia megastigma*) native to the forest areas of the South-West, which deserves special mention on account of its commercial and industrial use. A considerable acreage of this plant is cultivated in Victoria for the cut-flower trade and for the manufacture of scent. In Western Australia, however, it is the uncultivated land which provides the supply for both purposes and large areas are systematically stripped of the blossom each year.

CONSERVATION OF THE FLORA

Agricultural expansion in Western Australia since the end of the second World War has been considerable. With increased knowledge of trace elements in relation to plant nutrition, large areas of formerly unused land have been opened up for farming and, since this is of great significance in the economy of the State, it is likely that a steady increase in the use of land, particularly for agriculture, will continue for some time. In the face of this development the flora and fauna must give way. Many plant communities could become extinct and thus be lost to scientists and the general public for all time. The flora of the State is widely recognized, both in Australia and overseas, as being unique and deserving of preservation. Because of the growing need for land for agricultural and pastoral use, conservation of the flora on land not yet cleared is a matter of urgency. It is principally by the creation of vested Flora Reserves that this conservation can be brought about.

Already much has been accomplished but, if sufficient really representative reserves are to be established, there is still a lot to be done. A considerable number of reserves both small and large have already been set aside. Some of the smaller reserves have been established for the protection of a particular species or plant community, while others have been created for purposes, such as water catchment, which although not specifically directed to the protection of the flora do nevertheless assist in the preservation of the plant cover. Among the larger reserves are some which are specifically designed to preserve the whole of the environment and biological structure of important areas such as the Stirling Range, or of flora associations such as sandplain, woodland, and so on. These reserves are as large as they can be made, having due regard to the requirements of agriculture, forestry and other activities in the district. It is the large size and the diverse conditions in these reserves which permit the plants and animals within them to live in equilibrium, without affecting any of the species involved and thus preserving the biological balance.

Many of these reserves are not vested in any authority, but the most valuable are vested either in a Government Department, a special authority or the local governing body. Some of them are legally established as Class "A" Reserves. The National Parks Board administers the largest of the reserved areas which have been set aside specifically for the preservation of flora. The principal National Parks are those of the Stirling Range, Porongorups and Nornalup. The Stirling Range in particular is a most

valuable botanical area, and is also of value as a fauna reserve. Nornalup National Park contains some magnificent stands of timber and some excellent examples of coastal swamp formations, as well as a most picturesque estuary and river mouth.

A number of the most important nature reserves in the State are vested in the Fauna Protection Advisory Committee. The main concern of this Committee is the conservation of fauna, but it is obvious that the preservation of the flora within the reserves is of vital importance to the success of its work in protecting the fauna. Among the reserves administered by the Fauna Protection Advisory Committee are Bernier and Dorre Islands at the entrance to Shark Bay, Lake Magenta Reserve south of Newdegate, and the Pingelly Reserve.

The reserves described in the following paragraphs have been selected as being representative of the types of reserves already discussed. Reference to other such areas is made under the heading "Public Parks and Reserves" in Part 1 of Chapter VII.

The Murchison River Reserve is situated near the mouth of the Murchison River and includes the greater part of the gorge of the southern loop of the river, extending almost to the edge of the Ajana agricultural area. It is a large reserve, approximately 358,000 acres in area, and consists mainly of gently undulating sandplain which is underlain by a gravelly soil resting on Cretaceous sediments or in some areas on the Tumblagooda Sandstones of Silurian–Ordovician age. The gorge is one of the most remarkable physiographic features of Western Australia and must in time become one of the foremost tourist attractions the State has to offer. It is extremely rugged and picturesque and its sheer walls drop five hundred feet from the level of the sandplain. Permanent pools of brackish water occur along the gorge.

Three distinct types of flora are recognized in the area. They are the predominant sand heath, the lateritic association along the eastern boundary, and the coastal heath vegetation on the limestone soils. The area is one of the most valuable flora reserves in the State. Its importance is due largely to its location at the northern end of the South-West Province, where it comes under the influence of the Desert or Eremean Province. This overlap of two flora types has resulted in the development of a unique flora, containing an exceptionally large proportion of plants which are entirely restricted to the area. In this connexion the species of Banksia are of particular significance, while many other related plants in the Banksia family as well as a number of Myrtles found here occur nowhere else in the world. The gorge of the Murchison River contains many very fine examples of the picturesque River Gum (*Eucalyptus camaldulensis*), as well as a number of endemic species some of which are entirely restricted to this environment. However, it is the heath vegetation of the sandplain for which the area is particularly notable. This formation covers the greater part of the reserve, its flora being extremely rich both in species and in variety of colour and form. It undoubtedly constitutes the richest botanical area of the reserve, and during the spring and early summer it is a blaze of colour. Not only has vigorous speciation taken place here in past ages to produce a number of unique plants, but the reserve also contains the northernmost representatives of several typical South-West plants. Species such as the Firewood Banksia, Blueboy, Tree Smokebush and Mangles Kangaroo Paw extend northwards as far as this reserve, but are not known to occur much further to the north. It is important scientifically that these plants occur within the borders of the reserve, since they will be preserved for all time as evidence of the wide distribution of these and co-existing species.

The Stirling Range National Park of 270,000 acres is situated to the east of Tenterden and encloses the entire mountain system of the Stirling Range, which consists of Proterozoic sandstones, shales and slates. The Range reaches to a height of over 3,500 feet and is the dominant landmark of the country to the north of King George Sound. The reserve consists of the mountain range surrounded by a broad undulating plain carrying a low heath vegetation with a predominance of species of Myrtles and of Proteaceae. Stirling Range Poison (*Gastrolobium velutinum*) is common, and many other species of the Pea family also occur. A striking component of this heath is the Red Kangaroo Paw (*Anigosanthos rufa*). Around the base of the mountain peaks are forests consisting principally of stunted Jarrah. Springs and damp areas occur in the forests due to seepage from the higher land and there are several lakes both within the reserve and outside its boundaries. Because of the height of several of the peaks, snow is sometimes recorded, while a cloud blanket frequently covers all but the lowest peaks. Due to these phenomena the reserve contains a highly interesting and scientifically important endemic flora which makes it one of the outstanding botanical reserves in Australia. Altogether there are over a hundred species which occur within the reserve and are not known elsewhere in the world. A large proportion of the plants are outstandingly attractive, prominent among them being the Mountain Bells (*Darwinia* spp.), nine species of which are restricted to the Range while some are entirely confined to a single peak. *Isopogon latifolius*

is the most spectacular member of a group which is restricted to Western Australia. It occurs on the upper levels of Bluff Knoll, the highest point in the Range. Several species of *Banksia* and of *Hypocalymma* are endemic in the Range. The high degree of endemism and the spectacular character of the flora, some unique features of the fauna, and the rugged grandeur of the Range itself make the Stirling Range National Park one of the most valuable of the nature reserves of the State.

Bernier and Dorre Island Reserves—Bernier and Dorre Islands, which together comprise an area of about 26,000 acres, constitute portion of the western boundary of Shark Bay. They are some 16 and 19 miles in length respectively and are very narrow. They are in fact elongated dunes running in a north and south direction and consist largely of quaternary aeolianite with some loose sand. The islands are chiefly of value as fauna sanctuaries, since they contain vigorous populations of six native mammals some of which are rare on the mainland. They are situated at the northern extremity of the South-West Province where they come under the influence of both the South-West and the Eremean Provinces. The vegetation includes typical South-West plants such as *Phyllanthus*, *Triglochin* and several species of Myrtles, while a number of plants from coastal dunes such as *Spinifex* and some of the Daisy family are common on both islands. The Desert or Eremean flora is represented by the Poverty Bushes, Wattles, *Solanum*, and species of the Pea-Flowered and the Hibiscus families. The *Triodia* (Spinifex) which occurs over a great part of the interior of the State is also present on Bernier Island and is well represented on Dorre Island. The Northern elements have also penetrated to the islands and occur chiefly among the grasses, of which there are several species. Other plants demonstrating Northern affinities are the native Fig, the Caper, *Jasminum*, and the Euphorbiaceae. Several species in the island floras are endemic in the Shark Bay area, and a few were originally collected on the islands. These reserves are of extreme importance biologically both as yardsticks to measure the effects of sheep-grazing on the neighbouring Dirk Hartog Island and as natural laboratories in which to study and understand the processes of ecological interaction within our native plant and animal communities.

The Pingelly Reserve is situated to the east of Pingelly and is an outstanding example of extreme diversity of habitat types in a small area. It is no more than 3,000 acres in extent and consists of lateritic highlands in the northern and southern areas, between which erosion has uncovered masses of the country granite and produced extensive granitic soils. It is particularly rich in native animals while the plant assemblage covers some seven well-marked associations ranging from sandplain to a White Gum forest. This latter type is found in the more fertile loams in the valleys, where it is associated with Box Poison and Jam. Two different associations of *Acacia* are evident, the more important being that dominated by Jam, occurring on the better-class soils and merging into the White Gum area, the other being a Black Wattle association occurring along the bottoms of the valleys and along the watercourses. Sheoak forms almost pure stands in the granitic soils while thickets of Mallet clothe the steep rocky slopes below the gravelly tops of the hills. Few plants regularly grow in association with Mallet but, in this reserve, Bullock Poison (*Gastrolobium trilobium*) forms a constant understorey. York Gum dominates the flora in certain places, while in the lateritic soils on the tops of the scarps there has developed a mixed association dominated by *Dryandra* and containing several other members of the Proteaceae, together with representatives of the Myrtaceae and other families. It is the sandplain association, however, for which the area is most noteworthy. This vegetation type occurs in seven localities scattered throughout the reserve, each of them being distinctive in one or more respects. For example, one of these localities is distinguished by the Christmas Tree, another by the Narrow-leaved Banksia, a third by a deep yellow sand development, and another by heavily leached white sand where Jarrah is found. Despite its limited area, this reserve contains a remarkable diversity of flora and fauna, making it one of the most valuable of the nature reserves of Western Australia.

CHAPTER II — *continued*

PART 4 – THE FAUNA OF WESTERN AUSTRALIA

Contributed by

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ZOOGEOGRAPHY

Terrestrial Vertebrates

An analysis of most of the Western Australian groups of vertebrate animals shows that they can be referred to one or other of the three great faunal assemblages which zoogeographers recognize in Australia, namely the Bassian, Eyrean and Torresian faunas. Most members of these faunas are characteristic, respectively, of the following regions, the South-West (Bassian) with its regular winter rainfall, the arid and semi-arid interior and North-West (Eyrean) with intermittent and unreliable rainfall and the Kimberley Division (Torresian) with regular summer rainfall. Several elements of these faunas are sufficiently wide in their requirements for them to occur as " foreigners " in neighbouring regions, such as Torresian species which are found in the otherwise Eyrean Pilbara district of the North-West, and Eyrean species which occur in the Bassian South-West. Otherwise, the regions, as indicated above, have tolerably distinctive faunas.

The sharpest faunal break is between the Torresian fauna of the Kimberley Division and the Eyrean fauna of the Pilbara. The Kimberley is the headquarters in Western Australia of the Fruit Bats (*Pteropus*), various marsupials such as the Flying Possum (*Petaurus breviceps*), the Little Rock Wallaby (*Peradorcas concinna*), the Jungle or River Wallaby (*Protemnodon agilis*), and among the birds the Scrub-Fowl (*Megapodius freycinet*), the Fruit Pigeons (Ptilinopinae), Lorikeets (*Trichoglossus* and *Psitteuteles*), White Cockatoo (*Kakatoe galerita*) and most of the grass-finches. Among the reptiles there is also a certain distinctness of fauna in the three regions, with overlaps in several species.

The Torresian species which penetrate further south include the Northern Native Cat *Dasyurus hallucatus* (to the Fortescue River), the Brolga (normally only to Onslow), White-breasted Wood-swallow (to Shark Bay), and the Brown Honeyeater (right through to the South-West).

The boundary between the majority of the Eyrean species and the bulk of the Bassian species is less well-defined as there is a good deal of overlapping. For example the line which separates the woodland eucalypts and the mulga, the so-called " mulga-eucalypt line," is the extreme limit of most Bassian species, though many do not range inland beyond a line connecting Geraldton, Moora, Northam and the Stirling Range. The mulga-eucalypt line separates, to quote an example, the main distributions of the Grey Kangaroo (Bassian) and the Red Kangaroo (Eyrean). This line is also the northern limit of such well-known Bassian species as the Red Wattle-bird. It is also the northern boundary of many Eyrean species which are restricted to the south ; such as the Rufous Tree-creeper, Purple-crowned Lorikeet, Smoker Parrot and the Squeaker.

The South-West of the State has representatives of many well-known Bassian species also found in south-eastern Australia. These include among birds, the Brush Bronzewing, White-tailed Black Cockatoo, Western Rosella, Scarlet Robin, Yellow Robin, Southern Emu-Wren, Silvereye, White-naped Honeyeater, Western Spinebill, New Holland Honeyeater and Red-eared Firetail. Among mammals there are the Pigmy Possum, the Wambenger, the Grey Kangaroo, the Tammar Wallaby, the Brush Possum and various dunnarts (marsupial mice, *Sminthopsis*). Among frogs there are various *Crinia* and *Heleioporus inornatus* and *australiacus*; and fishes such as *Galaxias* and *Nannoperca*. However, there has been an extensive intermingling of Eyrean and Bassian elements in the South-West on a scale not paralleled in south-eastern Australia. In the South-West we have a blend of faunas in the sclerophyll forests which, though essentially Bassian in character, contain such Eyrean intrusives as the Purple-crowned Lorikeet, the Twentyeight Parrot, the Rufous Tree-creeper, the Western Warbler, the Banded Blue Wren and the Red-tipped Diamond-bird.

It should not be thought, however, that animal distribution is in any way a permanent or static situation. Distribution of various species is very sensitively adjusted to climate, the main factors being temperature and rainfall and the time at which the rain falls. From the long-term point of view there

have been very drastic climatic changes in Western Australia since the Pleistocene Ice Ages, and the discovery of fossil remains in local caves has shown that there has been a dramatic change in both faunal composition and distribution in the South-West. The climate has been both wetter and drier than it is now. This has resulted in an ebb and flow, as it were, of faunal elements out of and into the South-West. During the times when extensive humid conditions reigned, various mammals occurred which are now extinct in this State but still persist in south-eastern Australia. These included the Koala, the Tasmanian Wolf (*Thylacinus*) and the Tasmanian Devil (*Sarcophilus*). In the extremely arid times, creatures which are now living only in the desert country of the northern interior ranged closer to Perth. Among these were the Crest-tailed Marsupial Mice (*Dasycercus*) and the desert dunnarts (*Sminthopsis hirtipes*). The Ghost Bat (*Macroderma gigas*) once ranged as far south as the Margaret River ; it is now known no nearer than Wiluna, the Warburton Range country, and the Barlee Range.

Climatic alterations, on a minor scale, are constantly going on. In the past half-century, or longer, there has been a considerable change in northern Europe, Asia and America, an amelioration in some parts and a drying-up in others, with widespread effects on the distribution of animals. Something similar appears to have been taking place in Western Australia. Many dry-country bird species, of the Eyrean faunal assemblage, have made notable extensions of range into the south-west corner. These include the Galah, Little Corella, Budgerygah, Smoker Parrot, Crested Pigeon, Black-faced Woodswallow, Crested Bell-bird, Blue-and-white Wren, Black-throated Butcher-bird and Little Crow. The records of local naturalists, who keep district lists of local birds and mammals over a period of years, are very useful sources of data for plotting these changes. Frequent Museum surveys will provide more positive information.

In some cases distribution changes due to natural causes may be masked or modified through the alterations of habitat due to settlement. These habitat changes act to the detriment of woodland birds but favour open-country species (like pipits and plovers).

Coastal Marine Fauna [1]

The long Western Australian coastline (4,350 miles) extends from tropical to warm temperate waters, from Cape Londonderry at 14°S with a mean water temperature of 81°F to Albany at 35°S with a mean water temperature of 63°F. As is to be expected, the marine fauna is very different at the extremes. Two principal elements in this fauna have been recognized ; a northern tropical and a southern temperate fauna. The northern fauna is found right around northern Australia and many of the animals have a much wider distribution through the tropical Indian and west Pacific Oceans. For example the Serpent's Head Cowrie (*Ravitrona caputserpentis*) and the sea urchin *Echinometra mathaei* are found from the east coast of Africa through the Pacific islands ; both are abundant as far south as Rottnest Island. The southern fauna extends along the southern coastlines of Western and South Australia, with some species being common also on the New South Wales coast, though absent from Victoria. The boundary between these faunas has been drawn at different points along the west coast, according to the specialities of particular authors. However, there is in fact a broad area of overlap between North West Cape and Cape Leeuwin. Some southern species, such as the periwinkle *Melaraphe unifasciata*, are common as far north as Shark Bay and even to North West Cape. On the other hand some northern species are common on the rocky shores between Cape Naturaliste and Cape Leeuwin, for example the cowrie mentioned above, and may even extend east to Albany or Hopetoun. There are extensive colonies of the coral *Turbinaria* in Geographe Bay and smaller colonies of *Pocillopora* on Rottnest Island. *Turbinaria* occurs also in the Archipelago of the Recherche.

In addition to these northern and southern faunal elements there is a considerable number of endemic species, found only in the south-western part of the State. Both among the molluscs and less well-known animals such as the sea squirts there are many species which have not been found outside this region. Two examples are the Slate Pencil Urchin (*Phyllacanthus magnificus*) and the cone shell *Dyrapsis dorreensis*.

The islands of this part of the coast are of particular interest. At the Abrolhos Islands there are extensive coral reefs and other northern marine animals are much more numerous than on the adjacent mainland coast. At Rottnest also there are a dozen or more reef-building corals, although most species occur only as scattered colonies so far south, and again there are more northern species than along the adjacent mainland.

[1] Written in collaboration with Dr. E. P. Hodgkin and Mrs. L. Marsh.

Fauna of Inland Waters [2]

The inland waters are of many types and possess very varied faunas. They may be divided into four main ecological groupings : (1) the rivers of the Kimberley Division ; (2) the river system of the North-West from the De Grey to the Murchison ; (3) the streams, swamps, and lakes of the south-west corner ; and (4) the temporary waters of the dry inland represented by two widely different habitats, (i) freshwater claypans and soaks (including man-made dams) and (ii) the salt lakes.

The rivers of the North-West from the De Grey to the Murchison flow only intermittently, and between times of flood the fauna must survive in widely separated spring-fed pools in river beds. These pools, like those at Millstream Station on the Fortescue River, are often of striking beauty. Their fauna is relatively sparse as compared with the richer assemblages in the Kimberley rivers, the most conspicuous element being a few fish species and a freshwater tortoise (*Chelodina steindachneri*) which is confined to the region.

The permanent hill streams of the South-West have a diverse arthropod fauna. Most of these are insects but, in addition, there are several species of freshwater crayfish and freshwater mussels in slower-running parts—Marron (*Cherax tenuimanus*) occur in permanent streams of deep water ; Jilgie (*C. quinquecarinatus*) in shallow permanent water ; Koonac (*C. preissi*) make burrows in the mud of swamps. A species of a closely related group, the so-called "land-crabs" (*Engaeus*), has been recently discovered in the swamps of the South-West. Most rivers stagnate and may become saline in summer ; they are reduced to chains of large or small pools to which the fauna is restricted. The small transparent prawn *Palaemonetes* is often abundant in these pools. Shallow permanent lakes and swamps near the coast also have a fairly varied insect fauna, among which certain species of dragonflies are particularly abundant ; at times there are enormous numbers of *Daphnia* and related small crustaceans.

The inland freshwater claypans are characterized by an interesting ephemeral fauna, mainly of phyllopod Crustacea. The most conspicuous is the large shield shrimp (*Triops australiensis*) but a variety of fairy shrimps (Anostraca and Conchostraca) occur also. The eggs of these creatures survive for years in the dried mud and development is rapid when the claypans fill after occasional rains.

The most conspicuous animals in the waters of the salt lakes are the brine shrimps (*Artemia* and *Parartemia*), which at times build up to such high population densities as to attract large flocks of Banded Stilts, which breed only in certain of the inland salt lakes.

The fishes of the inland waters are described in a subsequent section.

THE COMPOSITION OF THE FAUNA

The fauna of Western Australia includes representatives of all major phyla of the Animal Kingdom and individuals range in size from the Blue Whales (*Balaenoptera musculus*), the largest mammals that have ever lived, to minute single-celled protozoa which cannot be seen without a microscope. No estimate can be made of the number of species, and probably the number of species of insects alone outnumbers all the rest by a comfortable margin. Here we have not attempted to describe all phyla. The vertebrates are given fairly full treatment because they are obvious and familiar animals to most of us. The insects (mostly those of economic importance) are dealt with in Part 5 of this Chapter, and the remaining phyla are treated in a few paragraphs which confine themselves to groups of interest.

THE VERTEBRATE FAUNA

Mammals

Unlike the birds and reptiles, wild mammals are not frequently seen in most parts of Western Australia. This is because most of the species are small and secretive and appear only at night. However, there are exceptions and, as any traveller in inland and northern parts of the State can attest, kangaroos of one species or another can often be seen in large numbers during daylight hours.

Most species of mammals have distinct ecological preferences which allow them to be categorized into one or other of the three main faunal groups which are described earlier in this Part under the heading *Zoogeography*. For example, in the kangaroo family, the Tammar Wallaby (*Protemnodon eugenii*), the Quokka (*Setonix brachyurus*), and the Brush Wallaby (*Protemnodon irma*) are found only in the South-West or on certain isolated islands off the coast. These species may be said to be Bassian and, of these, the Brush Wallaby is closely related to the South Australian Tolache Wallaby (*Protemnodon greyi*) and the Tammar to the Flinders Island Wallaby and the now extinct St. Peter Island Wallaby of South

[2] Written in collaboration with Dr. E. P. Hodgkin.

Australia. The most familiar kangaroo of the dry country with unreliable rainfall occupied by the Eyrean fauna is the Red Kangaroo or Marloo (*Megaleia rufa*), while in the Torresian fauna which occurs in the summer-rainfall country of the Kimberley Division we find such species as the Jungle or River Wallaby (*Protemnodon agilis*), the Little Rock Wallaby (*Peradorcas concinna*) and the Organ-grinder Wallaby or Karrabul (*Onychogale unguifer*). In addition to these species, which sort out in this convenient way, there are others which are widely distributed and in fact occur as members of all three faunal assemblages. The most familiar members of the family which do this are the Euro or Biggada (*Macropus robustus*), the Boodie (*Bettongia lesueuri*), and the Rock Wallaby (*Petrogale lateralis*) which may be found anywhere in suitable local habitats from the Kimberley to the South-West and inland to the South Australian border.

So far, only the kangaroos have been mentioned but, in fact, representatives of all three major divisions of the mammals (*i.e.* monotremes, marsupials and placentals) occur in the State.

The egg-laying monotremes are represented by the Echidna (*Tachyglossus aculeata*), sometimes called Spiny Anteater or Porcupine. This curious and completely inoffensive animal is not uncommon in the country around Perth and it even appears on occasions in densely-settled suburban areas. In drier districts, its diggings, made in its search for insects, are familiar around rocky hills and breakaways.

Marsupials, or pouched mammals, occur in great variety in Western Australia. The kangaroos and wallabies, already mentioned, are the herbivorous members of the group. These animals are the Australian evolutionary equivalent of the antelopes, deer, and horses of the other continents and there is often an extraordinary similarity in structure between members of the kangaroo family and these other herbivores. These similarities extend even to such details as the physiology and shape of the stomach and other organs of digestion. The reproductive systems of marsupials and their physiology have also long been of great interest to biologists because they differ from those of other animals. For example, it is now known that in the Quokka, and some other wallabies, the adults mate again immediately after the birth of the "joey." The embryo which is the product of this second mating does not develop immediately but is held in a dormant state in the female system. However, if the first young joey is lost from the pouch, this dormant embryo immediately begins to develop and a second joey is produced after a minimum period of time.

In Western Australia the kangaroos and wallabies are all terrestrial (there are no tree kangaroos), and even their arboreal relatives, the phalangerids, are few in number as compared with other parts of Australia. The Brush Possums, the Pigmy Possums and the Ring-tails have Western Australian representatives, but the Koalas and the striped Possums are absent, and of the four species of flying possums of eastern Australia only one (*Petaurus breviceps*) occurs in Western Australia and that only in the Kimberley Division. Although the species of possums in Western Australia are few in number, there are some unique forms which are of great interest. One of these is the rare Scaly-tailed Possum (*Wyulda*) of the Kimberley ; unlike other Australian possums this animal has a hairless scaly tail and only three specimens of it are known. There is also the curious and rarely-seen Honey Possum (*Tarsipes*) of the South-West. Wombats are known to have occurred in Western Australia around the turn of the century but have not been reported since that time.

Although the large carnivorous marsupials no longer live in the State, the smaller representatives of this group are still fairly common. There are two separate species of native-cats, a southern species (*Dasyurus geoffroyi*) and a northern one (*Dasyurus hallucatus*) as well as many species of smaller carnivorous and insectivorous forms. One of the smaller members of this family, the Dibbler (*Antechinus apicalis*), which is probably the rarest of them all, is commonly found as a fossil in the caves of Jurien Bay, but no specimen of it has been collected in the living state for many years and the species is not even in the collections of the Western Australian Museum.

The remaining group of marsupials is that commonly called the bandicoot family. One of these, the Pig-footed Bandicoot (*Chaeropus ecaudatus*) is probably the State's rarest mammal. Two specimens of it were collected by John Gilbert in 1841 some miles to the north-east of Northam. The species has not been seen in Western Australia since. On the other hand another species of bandicoot, the Quenda, or Short-nosed Bandicoot (*Isoodon obesulus*), is one of the commonest of marsupials. Its scratchings are common in country gardens and the little animal is often run over and found dead on roads. It lives largely on insects, and being nocturnal it is seldom seen but it is nevertheless very common in many areas in the South-West.

The third main group of mammals is that of the higher mammals or placentals. Animals of this group occur in Western Australia in addition to the marsupials and the monotremes, and it always comes

as something of a surprise to visitors (who generally have a strong preconception of Australia as a land in which all but introduced mammals and the Dingo are pouched mammals and monotremes) to learn that there are many species of Western Australian native placental mammals. In fact, if the seals, whales, and Dugong which occur around our coasts be counted, the species of native placental mammals outnumber the marsupial and monotreme species.

The composition of the mammal fauna is shown in the following table.

Kinds of Wild Mammals	Number of Species occurring in Western Australia (*a*)		Kinds of Wild Mammals	Number of Species occurring in Western Australia (*a*)	
Monotremes		1	Introduced Placentals—		
Marsupials		56	Rodents	5	
Native Placentals—			Land Carnivores	2	
Bats	22		Ungulates (Horses, Deer, Camels, etc.)	9	
Rodents	21		Rabbits	1	17
Marine Mammals :				—	—
Seals (*b*)	2				143
Dugong	1		TOTAL, ALL SPECIES		—
Whales	22				
Land Carnivores—Dingo....	1	69			
	—				

(*a*) Total numbers of species are from a forthcoming Classification of Western Australian Mammals by W. D. L. Ride—in preparation. (*b*) Only resident seals are counted. Antarctic seals are occasionally " shipwrecked " on southern coasts but these are clearly stragglers into the area.

Within Western Australia the best-established groups of native placental mammals, *i.e.* the bats and rodents, are distributed in much the same ecological manner as are the marsupials; some are Eyrean forms like *Leggadina hermannsburgensis*, the small mouse which builds mounds of pebbles on stony ridges ([3]), others are Torresian like the majority of the Fruit-bats or Flying Foxes (*Pteropus* and *Macroglossus*), while yet others are typical Bassian species and are confined to the country of reliable winter rainfall in the South-West, *e.g.* the Swamp Rat (*Rattus fuscipes*). These native placental mammals are of great zoological interest because some of them, and in particular the native rats and mice, have been here for many millions of years and closely parallel (in adaptation to our stringent ecological conditions) their relatives in similar places in other lands. Thus, we have tiny hopping-mice (*Notomys*), like miniature kangaroos, which are very similar in appearance and habits to the jumping-mice (Zapodidae) of the American and Eurasian dry-lands, and the jerboas (Dipodidae) of Africa; but it must be emphasized that the jumping specializations of our own hopping-mice have evolved quite independently within Australia.

Some of our native placental mammals are economically important. Until recently a shore-based Western Australian fishery at Carnarvon depended upon the migrating groups of Hump-back Whales (*Megaptera novaeangliae*) which move along the western coast between their feeding grounds in Antarctic waters and their breeding places in the tropics. Unfortunately, immoderate exploitation of the stocks (principally in Antarctic waters) has so reduced the population that it is now in danger of extermination. Another whale fishery, at Albany, is dependent upon Sperm Whales (*Physeter macrocephalus*). The catching of Southern Fur-seals, formerly lucrative, is now no longer permitted. The Dugong (*Dugong dugon*) was once an important source of food for the natives of the coastline from Shark Bay to the Northern Territory. The Dingo (*Canis familiaris dingo*) has probably not been in Australia for as long as the other native mammals, and may well have entered with the first of the Australoid people who were ancestral to our present Aborigines. In some parts of the State the Dingo is a major problem to the pastoral industry because of its attacks on livestock.

The preceding table also shows that there is a large number of introduced species as well as native mammals. These are now a part of the wild mammal fauna of Western Australia and all are placentals. Some of these species are also agricultural and pastoral pests and they have become so well entrenched in the environment that there is no doubt that any discussion of the mammalian fauna of the State must take them into account and mention should be made of some of them here. Red Deer (*Cervus elephus*)

([3]) It is suspected that these may be dew-traps.

occur spasmodically in the South-West around Pinjarra, Waroona and Harvey. Camels (*Camelus dromedarius*) occur in large numbers and are distributed through the Eastern Goldfields up through the Pilbara and into the Kimberley. They have been declared vermin around Laverton, Nullagine, Port Hedland, and Halls Creek. Donkeys (*Equus asinus*) have a distribution very much like that of the camel and also occur generally throughout the Kimberley. Wild goats (*Capra hircus*) are ubiquitous in dry country but are mainly concentrated in the Murchison and the North-West. A small herd of Black-buck (*Antilope cervicapra*) occurs near Geraldton. Rabbits (*Oryctolagus cuniculus*) are widespread in Western Australia but are only of economic significance south of the Murchison. They are by no means the problem that they used to be, due largely to programmes of intensive rabbit extermination. Foxes (*Vulpes vulpes*), declared vermin, are also widespread but do not commonly occur north of the De Grey River, having only been reported spasmodically from the Kimberley Division.

Examination of the composition of the older mammal fauna of Western Australia, *i.e.* monotremes, marsupials, bats and native rodents, as set out in the next table, reveals that one-quarter of all species recorded from the State today appear to be confined to Western Australia. In fact, it is probable that the number of species shown as indigenous to Western Australia is actually too high, because some of them are known only from very few specimens and occur in environments which extend out of Western Australia into the adjacent Northern Territory and South Australia. Examples of these are a small marsupial mouse from the Pilbara and a true mouse from Rawlinna on the Trans-Australian Railway. The South-West contains by far the greatest number of endemic species. Some of these, *e.g.*, native rats like *Pseudomys shortridgei, P. occidentalis, Gyomys occidentalis* and the Ringtail Possum *Pseudochirus occidentalis*, may later prove to be local subspecies of South Australian forms but others like the Banded Hare-wallaby (*Lagostrophus fasciatus*), the Honey Possum (*Tarsipes spenserae*) and the Quokka (*Setonix brachyurus*) belong to distinctive genera which are not found elsewhere and are true Western Australians.

ENDEMISM OF NATIVE MAMMALS

(*excluding marine mammals*)

Group	All Endemic and Non-endemic Species	Number of Endemic Species :—			
		Total Endemics	Endemics north of Fitzroy River	Endemics of South-West Land Division	Endemics of remainder of State
Monotremes	1				
Native Cats	20	4	1	2	1
Marsupial Moles	1				
Bandicoots	6				
Possums	6	3	1	2	
Wombats	1				
Kangaroos and Wallabies	22	6		4	2
Rats	21	11	3	5	3
Bats	22	1		1	
Dingo	1				
Totals	101	25	5	14	6

Birds

The bird fauna of Western Australia consists of a selection of the species occurring in eastern Australia, with only a very minor development of endemic forms. All of these latter, except one (the Western Australian King Parrot, *Purpureicephalus spurius*), have a close and obvious affinity to other Australian forms. The quantitative relationship of the Western Australian bird fauna to that of Australia as a whole is indicated in the following table, which has been prepared on an ecological basis.

	Number of Breeding Species (a)		Number of Non-breeding Visiting Migratory Species (a)	
	Western Australia	Australia	Western Australia	Australia
Land birds	279	427	7	8
Inland water birds	66	69	28	34
Sea birds	26	39	32	47
Total	371	535	67	89

(a) Numbers of species are based on a large-species concept and geographical representatives of a species group are not separately enumerated. Thus the numbers given are rather less than would be the case if all morphological species were admitted.

Representatives of most of the families and genera of Australian birds occur in this State. Notable absentees include the Cassowary (*Casuarius casuarius*), Brush Turkey (*Alectura lathami*), several of the fruit-pigeons, the Crimson Rosella (*Platycercus elegans*), Lyre-bird (*Menura novae-hollandiae*), several honeyeaters including the Regent (*Zanthomiza phrygia*), Apostle-bird (*Struthidea cinerea*), Cat-birds (*Ailuroedus*), Satin Bower-bird (*Ptilonorhynchus violaceus*) and Rifle-birds (*Ptiloris*).

Space is insufficient to detail all the forms occurring in Western Australia. Mention may be made of some distinctive species and groups which are common and widely distributed.

The Emu (*Dromaius novae-hollandiae*) is still numerous all over the State and is occasionally encountered in the Darling Range near Perth. Australia's only breeding species of penguin, the Fairy Penguin (*Eudyptula minor*) nests on islands off the southern and south-western coasts as far north as Carnac near Fremantle. The Mallee-fowl or Gnow (*Leipoa ocellata*) is still plentiful and, after a period of decline during which its disappearance was feared, it is now increasing in abundance. All of the widespread species of Australian quails occur but owing probably to the scarcity of natural grasses in the south are not individually very numerous. Among the pigeons two species have shown notable recoveries in population strength. After a long period of scarcity the Common Bronzewing (*Phaps chalcoptera*) began a cycle of increase about 1936 and is still very abundant. The rare Flock Pigeon (*Histriophaps histrionica*) of the more arid country of the North-West and the far North has declined all over Australia and had not been recorded in this State since 1927 until 1958 when considerable flocks were observed in the Hamersley Range and the Fortescue River country. It has also reappeared in parts of the Kimberley Division.

A very distinctive member of the rail family is the Black-tailed Native Hen or Gallinule (*Tribonyx ventralis*). It is a creature of the drier country but is subject to violent fluctuations in numbers, when it is liable to invade the South-West in great strength. A famous occasion was in May, 1833 when it overran the settlers' fields and gardens around Perth and did considerable damage to the crops. Similar irruptions took place in 1853, 1886, 1897 and 1919. Later invasions, such as that in 1952, have been on a much more modest scale. Of the three Australian grebes the most plentiful is the Hoary-headed Grebe (*Podiceps poliocephalus*) which assembles in the winter in big flocks on the southern estuaries, including that of the Swan River.

In the petrel group there are five breeding species in local waters. The most numerous is one of the mutton-birds, the Wedge-tailed Shearwater (*Puffinus pacificus*) which nests on most islands between Carnac in the south and Sable Island, in the Dampier Archipelago, in the north. A second mutton-bird, the Fleshy-footed Shearwater (*P. carneipes*) nests between Cape Leeuwin and the Archipelago of the Recherche; it is a migratory species and in the winter months migrates to the north-western sector of the Indian Ocean. A similar trans-equatorial migrant is the White-faced Storm-petrel (*Pelagodroma marina*), a diminutive form rarely observed at sea. It nests often in vast aggregations on islands off the south coast and as far north as the Abrolhos. All of these species nest in the spring and summer months. The remaining two breed in the winter. The Great-winged Petrel (*Pterodroma macroptera*) shares the nesting islands off the south coast with the Fleshy-footed Shearwater in a sort of "Box and Cox" relationship. The black and white Little Shearwater (*Puffinus assimilis*) has a wider nesting range, from the Recherche to as far north as the Abrolhos; in former times it nested at Parrakeet Island off Rottnest Island. In the winter months some 22 species of southern-breeding petrels visit local seas. They vary in size from the little Wilson Storm-petrel (*Oceanites oceanicus*), barely larger than a swallow, to the great Wandering Albatross (*Diomedea exulans*). The Wilson Storm-petrel "winters" all along the Western Australian coast to the tropics and is a familiar sight around fishing boats in Shark Bay. The most com-

mon of the albatrosses is the Yellow-nosed Albatross (*Diomedea chlororhynchos*) and may be seen as far north as Point Cloates. The most familiar of these visitors is the dusky Giant Petrel (*Macronectes giganteus*). Ringing experiments have demonstrated that the birds seen here are first-year individuals making circumpolar flights round the Southern Hemisphere ; marked birds found in the South-West had been ringed a few months previously in their nests at Heard Island, Macquarie Island, and islands in the South Orkneys in the South Atlantic.

All of the five species of Australian cormorants or shags occur locally. Despite complaints of their depredations on commercially important fish, investigations have cleared the birds of blame, though one species, the Black Cormorant (*Phalacrocorax carbo*), specifically identical with the Cormorant of Europe, does occasionally include edible fish in its diet. One marine species, the Pied Cormorant (*P. varius*), which enters the Swan River estuary and Peel Inlet, is mainly responsible for the guano deposits on the coastal islands. Deposits at Shark Bay were commercially exploited in the last century and at one stage, in 1850, a detachment of troops was stationed at The Quoin Bluff, Dirk Hartogs Island, to ensure the collection of royalties. Pelicans in Western Australia, unlike those in eastern Australia, breed only on coastal islands and not on inland waters. The nearest breeding place to Perth, and presumably the origin of most of the Swan River Pelicans, is Pelican Island, Shark Bay.

Fourteen species of terns are recorded for the southern parts of the State and three more for the Kimberley Division. Three of the seventeen are migrants from the Northern Hemisphere and ringed individuals of the European Common Tern (*Sterna hirundo*) and the Arctic Tern (*S. macrura*), marked respectively in Sweden and Soviet Russia (near Archangel), have been recovered near Fremantle. These birds must have reached our coast via the Cape of Good Hope. The Silver Gull (*Larus novae-hollandiae*) is noteworthy for having two breeding seasons in the southern part of the State. On the islands at Safety Bay, for example, one part of the gull population lays eggs in the autumn and the other in the spring.

The numerous Order of wading or shore-birds (sandpipers, dotterels, and plovers) includes a few locally-breeding species but the majority are migrants from the Northern Hemisphere, where they breed in the tundra zone of northern Asia. Though they frequent ocean beaches and estuaries, as well as swamps and lakes, they are listed in the category of " inland water birds " in the table on page 74. Some 25 species of these birds, commonly called " snipe " (though the true Snipe of eastern Australia, *Gallinago hardwickii*, does not occur in this State) migrate to Western Australia. In addition there are 16 species of this Order which breed in Australia. One of them, the Red-capped Dotterel (*Charadrius alexandrinus*), is virtually identical with the rare Kentish Plover of England. Here it is very common and nests at Pelican Point on the Swan River. Another local breeder is the remarkable Banded Stilt or Rottnest Snipe (*Cladorhynchus leucocephalus*), which is an attractive inhabitant of the salt lakes of Rottnest Island. However, it nests only on the inland salt lakes. The nesting habits remained long unknown until colonies were discovered at Lake Grace and Lake King in 1930.

The Australian Bustard (" Wild Turkey ", *Eupodotis australis*) is a magnificent bird which has been largely exterminated by shooters over much of south-eastern Australia and in the developed South-West of this State. It is not uncommon in sparsely-settled areas and individuals occasionally appear on the open coastal country quite near Perth. It has recently been demonstrated by ringing that the Straw-necked Ibis ranges between south-western Australia and northern and eastern Australia. Fledglings marked in the nests at Muchea have later been taken in the North-West, the Kimberley Division, Arnhem Land and near Orange (New South Wales).

The Brolga (*Grus rubicunda*) is a northern bird normally found as far south as Onslow, but some individuals may wander into the outer parts of the South-West as occurred in 1952. In the heron family a new bird has been added to the State list—the Cattle Egret (*Bubulcus ibis*), which appears to have colonized northern Australia from Indonesia and has now spread over much of eastern and Western Australia.

There are 18 species of swans and ducks occurring in the State, one of the most remarkable, perhaps, being the Cape Barren Goose, which is now restricted to the islands of the Recherche Archipelago. Recent leg-ringing experiments have shown that the common and widespread Grey Teal (*Anas gibberifrons*) wanders indiscriminately all over Australia, its movements being influenced by availability of surface waters.

The State is also well provided with hawks and eagles, 24 species being found within its limits. Most are harmless economically and the few that do take chickens and lambs are not serious depredators,

though there is controversy on the role of the Wedge-tailed Eagle (*Aquila audax*) which is, however, classified as vermin for the destruction of which a bonus is payable under the provisions of the Agriculture Protection Board Act.

There are not as many species of the parrot group in Western Australia as there are in eastern Australia but one species, the Western Australian King Parrot or Red-capped Parrot (*Purpureicephalus spurius*), is restricted to the South-West and has no near relatives elsewhere. The Twentyeight Parrot is a form of the Port Lincoln Parrot (*Barnardius zonarius*) and is common almost everywhere, being regularly present in King's Park, a natural reserve adjacent to the City of Perth.

The Kookaburra (*Dacelo gigas*), so common in the forests of the South-West, is not a Western Australian native, but was introduced from eastern Australia by the Acclimatisation Board during January, 1897. A similar species, however, the Blue-winged Kookaburra (*D. leachii*) occurs in the north, as far south as the Wooramel River. The Rainbow-bird (*Merops ornatus*) in the south is a strict migrant, arriving regularly in the first week in October. Local birds migrate to the north of the State, the wintering area being from the Gascoyne River northwards, but some individuals cross the Timor Sea to the Indonesian islands. There are eleven cuckoo species in our area, the commonest being the Pallid Cuckoo (*Cuculus pallidus*) whose plaintive insistent note is heard soon after the winter rains set in.

In the great group of passerines, or song-birds, (Order Passeriformes) the most celebrated is the Noisy Scrub-bird (*Atrichornis clamosus*), a primitive almost-flightless bird which until recently was believed to be the only Australian bird which had become extinct since white settlement. The last specimen was collected by the ornithologist A. J. Campbell at Torbay in 1889, but late in 1961 a surviving population was discovered at Two People Bay east of Albany. Space is insufficient to deal in any detail with other members of this large Order. Throughout the State there are 172 species, of which 95 occur in the southern, settled parts and at least 33 are found in King's Park. A distinctive robin, the White-breasted Robin (*Eopsaltria georgiana*), occurs in the South-West. It is a relative of the yellow robins and is found in the dense coastal and forest thickets from Geraldton southwards and east to Albany and the Porongorups. The Western Warbler (*Gerygone fusca*) is a sweet-voiced songster which may be heard in the street trees of Perth, the only Australian capital city in which it lives ; in the other States the bird is an inland species. Another distinction of the Perth metropolitan area is that four species of blue-wren, a greater number of species than in the environs of any other capital city, have been noted there. One species, the Red-winged Wren (*Malurus elegans*), which used to live near the city, disappeared when Herdsman Lake was drained. The remaining species are the Splendid Wren (*Malurus splendens*), occasionally still seen in the University grounds ; the Blue-and-white Wren (*Malurus leuconotus*) in the coastal dune thickets, and the Causeway and Pelican Point samphire flats ; and the Variegated Wren (*Malurus lamberti*) in the dune thickets. Honeyeaters are numerous, the largest, the Red Wattle-bird (*Anthochaera carunculata*), being a familiar bird in metropolitan streets and gardens. Most of the grass-finches are restricted to the Kimberley Division, where ten species are found. However, one of them, the widespread Zebra Finch (*Taeniopygia castanotis*), nests as near to Perth as Northam and York. Two bower-birds occur in the State. The Great Bower-bird (*Chlamydera nuchalis*) is confined to the Kimberley Division, but the Spotted Bower-bird (*C. maculata*) is found in the North-West and ranges south to the East Murchison country and Malcolm in the Eastern Goldfields.

In contrast with all other Australian States there are very few species of exotic birds established in Western Australia. (The same is true of the Northern Territory.) In the towns of the South-West two turtledoves are plentiful, the Indian (*Streptopelia chinensis*) and the Senegal (*S. senegalensis*). The Goldfinch (*Carduelis carduelis*), an escapee from aviaries, breeds freely in the Perth metropolitan area and around Albany. The Indian or Ceylon Crow (*Corvus splendens*) repeatedly arrives at Fremantle on ships from the Orient but the vigilance of officers of the Department of Agriculture and port officials has led to the successful eradication of the unwanted immigrants. The House Sparrow (*Passer domesticus*) has been similarly kept at bay at Fremantle. This species did, however, make a temporary colonization, from South Australia, in the vicinity of Eucla and Mundrabilla in 1917-18 but it failed to make any headway and disappeared from that sector.

Reptiles

In Western Australia the reptiles are represented by three major zoological groups or Orders. These are the Chelonia (four marine species of turtles and six of freshwater tortoises), Crocodilia (two of crocodiles) and the Squamata (62 species of snakes and 159 of lizards).

The freshwater tortoises of Western Australia, like those of the rest of the continent, belong to the ancient group of side-necked tortoises. In most other parts of the world tortoises retract their heads straight backwards bending their necks in a vertical S-shaped curve. Australian tortoises, and certain others from South America, bend their necks sideways ; this is believed to be an ancient character. Although the species of Western Australian tortoises are few, they are of great interest and their distributions are far from well understood. This is especially true of the species inhabiting the Kimberley. Freshwater tortoises do not seem to fall into simple faunal zone classifications. The common species of the South-West, *Chelodina oblonga*, also occurs in the Kimberley but not in between. The common species of eastern and central Australia, *Emydura macquarii*, occurs in the Kimberley Division in a slightly more globose form which has been called *Emydura australis*. The river systems from the Irwin, in the Northern Agricultural Division to the De Grey in the northern Pilbara, have their own tortoise (*Chelodina steindachneri*), while a highly specialized short-necked tortoise (*Pseudemydura umbrina*) is apparently confined to a few square miles of winter swamps between Upper Swan and Bullsbrook to the north of Perth. Because of its vulnerability to extinction this last species is rigidly protected.

Marine chelonians also occur in large numbers around the coasts. The Green Turtle (*Chelonia mydas*), the species which is used for soup making, comes ashore to lay its eggs on the northern beaches. Attempts are made from time to time to exploit this species commercially, but no permanent industry has been successfully established.

There are two species of crocodiles in Western Australia. One is the harmless fish-eating Freshwater Crocodile (*Crocodylus johnstoni*) and the other the dangerous Salt-water, or Estuarine Crocodile (*C. porosus*). The former is protected by law, while the latter forms the basis of a lucrative trade in hides. Both species are confined to northern parts of the State.

Snakes and lizards are common and widespread throughout the State, and in numbers of obvious individuals they are probably surpassed among the vertebrates only by the birds. In the South-West, Bobtails (*Trachysaurus rugosus*) can often be seen crossing the roads at most times of the year, while the walker among coastal sand dunes on warm days cannot avoid noticing innumerable small dragon-lizards which move away from in front of him. In the southern part of the State the largest lizard which is at all common is the Goanna (*Varanus gouldi*). These are frequently between three and four feet in length. In northern areas the Bungarra (*Varanus giganteus*) exceeds it in size. A few species are confined to the South-West and of these the most interesting are Mueller's Snake (*Rhinohoplocephalus bicolor*), the Little Brown Snake (*Elapognathus minor*), the Black Striped Snake (*Vermicella calonota*) and the Slender Snake Lizard (*Pletholax gracilis*) which is also one of our rarest species of lizard. An Eyrean species which never ceases to surprise the visitor is the terrible-looking Mountain Devil (*Moloch horridus*). This lizard is actually one of the most gentle and harmless of animals and lives exclusively on ants.

The snake fauna of the State is diverse and, like that of other parts of Australia, contains many venomous species, the best known being the Tiger Snake (*Notechis scutatus*), the Dugite (*Demansia affinis*), the Gwardar (*D. nuchalis*), the Death Adders (*Acanthophis antarcticus* and *A. pyrrhus*) and the Mulga Snake (*Pseudechis australis*).

The snakes and lizards are well described in Glauert's *Handbook of the Snakes of Western Australia* and *Handbook of the Lizards of Western Australia* (see bibliography at the end of this Part).

Because of the great distance of the Kimberley Division from centres of scientific research, insufficient is known of its snakes and lizards. As in the case of some of the smaller mammals, some endemic species of lizards have been described, but until much more scientific collecting and research has been done it will not be possible to evaluate such apparently-unique species. Some Kimberley species of lizard, *e.g.* the Frilled Lizard (*Chlamydosaurus kingi*), through being commonly illustrated in journals because of their bizarre appearance, have become familiar to the public.

Amphibia[4]

Unlike the other continents Australia has no newts or salamanders (Urodela) or worm-like gymnophionans (Apoda). However, frogs (Anura) are abundant.

The frogs of Western Australia fall into the same grouping (Bassian, Eyrean and Torresian) which was mentioned in the section on mammals. However, they lack the diversity of genera and species

[4] Written in collaboration with Dr. A. R. Main.

shown by other groups and only ten genera with about thirty species are known from south of the Tropic of Capricorn. Of these, two genera, *Metacrinia* and *Myobatrachus*, each with one species, are restricted to the South-West. Most of the other kinds of frogs are distinct from, but related to, species found elsewhere in Australia.

Since most of Western Australia is exceedingly dry it is of interest to note that frogs are common in these arid regions. Those species of *Heleioporus* which occupy marginal-desert habitats overcome drought conditions by burrowing into the damp sub-soil. However, the arid-country species of *Neobatrachus* frequent clay soil where deep burrows are impossible and water can be lost. These species show no special capacity to endure greater water loss than *Heleioporus* species, but they do display an exceptional capacity for rapid replacement of water when water is present, as for example after thunderstorms. The water-holding frog, *Cyclorana platycephalus*, is found in inland and northern parts of the State. All " desert " species retain an aquatic larval life, but this is much shorter than that of species in the well-watered parts of the State. The only species lacking aquatic larval development occur in the wetter South-West ; these are *Myobatrachus gouldii*, *Metacrinia nichollsi* and *Crinia rosea*. *Myobatrachus gouldii* is the only species which exhibits any strong dietary preference and eats only termites (Isoptera).

Freshwater Fishes

The truly freshwater fish fauna of the southern part of the State is, by eastern Australian standards, an impoverished one and the species, with the exception of the freshwater catfish (" cobbler "), are diminutive in size. Most of the species are representatives of eastern Australian genera, such as the Pygmy Perch (*Nannoperca vittata*), Mountain Trout (*Galaxias truttaceus*), Black-striped Minnow (*G. pusillus*), and the Native Minnow (*G. occidentalis*). Others are more distinctive, with no near relatives in eastern Australia, such as the Nightfish (*Bostockia porosa*), the King River Perchlet (*Nannatherina balstoni*) and the newly-described scaled galaxiid (*Lepidogalaxias salamandroides*). There are several gobies (*Glossogobius suppositus* and *Lizagobius olorum*) and Hardyheads (including *Atherinosoma edelensis*, *A. rockinghamensis*, *A. elongata* and *Craterocephalus cuneiceps*). A lamprey (*Geotria australis*) ascends the rivers to breed and has been recorded north to the Swan River system, but is more abundant in the streams emptying on the south coast. An eel (*Anguilla australis*) has been recorded from the South-West but it is not known whether it is native to the area or has been introduced.

The north-western rivers have a richer fish fauna. The most widespread is the Spangled Perch (*Therapon unicolor*), a useful food fish which occurs in all rivers south to the Murchison. A large catfish (*Arius australis*) reaching 5 lb. in weight, occurs in the systems south to the Fortescue. The Rainbow Fish (*Melanotaenia*), popular with aquarists, occurs in the river systems of the Pilbara and the Kimberley. The remarkable Blind Gudgeon (*Milyeringa veritas*) and blind eel (*Anommatophasma candidum*) occur in wells and subterranean channels in the North West Cape area. The Kimberley Division has an even larger series of freshwater fishes. These include a catfish (*Neosilurus brevidorsalis*), various Bony Bream (*Fluvialosa*), various perch-like fishes (*Therapon*, *Acanthoperca*), Gudgeons (*Carrassiops*) and two freshwater saw-fishes (*Pristis clavata* and *Pristiopsis leichhardti*). There is also a freshwater eel (*Anquilla bicolor*) in these far northern waters.

Marine Fishes [5]

The marine fish fauna of Western Australia is probably richer in species than that of any other Australian State. This is because the fish of the northern part of the State's very long coastline belong to the rich tropical Indo-Pacific fauna, while its southern fauna is a temperate one which includes many elements peculiar to Australian waters. The most up-to-date list of the species of Western Australian fish, published in 1948, enumerates 740 species, but since that time collecting has revealed about 120 more. Even so, this figure is still far short of the total number which, it is suspected, will eventually be found to be in the neighbourhood of two thousand.

From this it can be seen that there is much to be learnt about the fish of Western Australia but it is probable that only a few of these species are confined to Western Australian waters. At present it seems that most of the fish occurring in the tropical part of the State are widely distributed, and species often range throughout the whole of the tropical Indian and Pacific Oceans, while the species which are found along the south coast usually occur also in the waters of South Australia, Victoria, Tasmania and southern New South Wales.

[5] Contributed by Dr. G. F. Mees.

Between Cape Leeuwin and Shark Bay both northern and southern elements are found, the tropical element dominating as far south as the Houtman Abrolhos.

In addition to the widely-distributed tropical and southern elements, there are a number of species, between thirty and forty, which seem to be peculiar to Western Australia. It is necessary to be cautious here for two reasons. Firstly because the Indo-Pacific fish fauna is, as a whole, poorly known and some fish, at present only recorded from Western Australia, may actually have wider ranges. Secondly, our classification of fishes is still imperfect so that fishes which we regard as endemic to Western Australia may be known from some other region, but under different names. On the other hand there can be no doubt that at least a proportion of these species which we now believe to be endemic will prove to be confined to Western Australian waters.

In the following very incomplete review, a number of the more important and interesting families and species are listed.

Of the major groups, the Elasmobranchii (sharks and rays) are richly represented, with nearly eighty species, of which the most familiar are the Port Jackson Shark (*Heterodontus portusjacksoni*), the Carpet Shark or Wobbegong (*Orectolobus maculatus*) and the shark known locally as the Swan River Whaler (*Carcharhinus*), which can be caught in the Swan River as far upstream as the Causeway. Its specific identity has not yet been established beyond doubt, but it is probably widely distributed. The foregoing species are regarded as harmless to man ; of the dangerous species, the Grey Nurse (*Carcharius arenarius*) is perhaps the best known. Three fatalities from shark attack have been recorded for Western Australia (in 1803, 1923 and 1925) and a few people are known to have been maimed. It may be said, however, that in Western Australia the danger of shark attack is low.

Most major families of bony fishes are represented, but only a number of the more interesting or familiar species can be mentioned here.

There are about ten species of true herring (Clupeidae), one of which, the Pilchard (*Sardinops neopilchardus*) will in future probably become of economic importance. The rather similar-looking *Amblygaster postera* seems to be confined to Western Australia. The State is particularly rich in sea-horses and pipe fishes, there being some 25 species. The most familiar of these is perhaps the leafy sea-horse (*Phyllopteryx foliatus*) which is often found on the beaches after storms. The so-called Sand Shark or Rat Fish (*Gonorhynchus greyi*), a peculiar fish and the sole representative of its family, deserves mention ; it is fairly common off sandy coasts of the South-West. Though eels are represented by several families and over twenty species, only three are common in the South-West : the Snake Eel (*Ophisurus serpens*), a slender golden brown eel inhabiting sandy estuaries, which is often taken for a snake and referred to as the water snake ; Woodward's Eel (*Gymnothorax woodwardi*), found on rocky shores, yellowish green with a network of grey lines ; and the Conger Eel (*Conger wilsoni*), which normally is dark brown in colour.

Garfishes (Hemiramphidae) are common. Of their relatives the Long Toms (Belonidae), only *Belone ciconia* is common in the South-West the others being more tropical in distribution, though one of the northern species, *Belone hians*, has been found as far south as Rottnest Island.

Silversides and hardyheads (Atherinidae) are well represented and so are mullets (Mugilidae). Some representatives of these groups have been mentioned in the preceding section, which deals with freshwater fishes.

The family Serranidae, known as gropers, rock cod, etc., are well represented by nearly thirty species. The best known is the North-west Groper (*Epinephelus tauvina*) which attains a length of more than seven feet. Most species have a very wide, mainly tropical, distribution, but *Epinephelus rankini* is only known from a restricted area round Onslow and must be looked upon as endemic to Western Australia. In temperate waters the preceding family is more or less replaced by the related Hypoplectrodidae.

Some small families, like the Australian Salmon (Arripidae), Whiting (Sillaginidae) and Snappers (Sparidae) are of great economic importance, though there are only a few species. On the other hand the Skipjacks (Carangidae) are the largest family of the State and comprise some thirty species. Another group which are also called Snappers (Lutjanidae) is prominent in the tropical part of the State. These are often referred to as North-west Snappers and should not be confused with the southern Snapper (*Chrysophrys unicolor*) which belongs to the Sparidae.

Coral fishes (Chaetodontidae) are richly represented, mainly along reefs in the tropics; but a number of species come down to the Abrolhos Islands, and some even near to Perth. Most species have a very wide distribution in the Indo-Pacific, but one, *Chaetodon assarius*, has not been found outside Western Australia.

The Mackerel family (Scombridae), which includes mackerel, Spanish mackerel, tuna, bonito and albacore, is important both in tropical and temperate waters. The related marlins and swordfishes, well known to sporting fishermen, also occur in these waters.

Flatfishes (Heterosomata) occur in a great variety of species, and the same can be said of Parrot-fishes and Wrasses (Scaridae and Labridae). All these groups are as yet very insufficiently known.

The stargazers and stonelifters are sluggish bottom fishes that deserve mention because of their unusual shape. One, *Ichthyscopus barbatus*, occurs off the south-west coast and also in South Australia, and is regularly caught by anglers. Another species, *Ichthyscopus insperatus*, a common fish of the north-west coast from Broome to Shark Bay, seems to be confined to Western Australia. The dragonets (Callionymidae), of which nine species have been recorded, are smaller, but their pretty appearance attracts attention, and one species, *Dactylopus dactylopus*, widely distributed in the Indo-Pacific, is regularly found off sandy beaches as far south as Rockingham.

Blennies (Blenniidae), weedfish (Clinidae), and gobies (Gobiidae) are small fishes of which there are many species ; blennies are most plentiful in rockpools and on reefs in the tropics, while gobies are also found on sandy bottoms.

There are some twenty species of scorpion fishes known from the State, the most familiar of which are *Scorpaena sumptuosa* in the south, and the small *Scorpaena bynoensis* in the north ; the first-mentioned species is also interesting in that, though it has been known for almost a century, it has never been recorded from outside Western Australia. Of the closely-related Synancejidae, the feared stone fish, three species are known from the State, one of which, *Erosa daruma*, is apparently restricted to the North-West and is known from but two specimens. A related species occurs in Queensland and Japan.

Flatheads (Platycephalidae) are common in the temperate part of the State.

An interesting family is that of the angler fishes or toad fishes (Antennariidae). Their curious shape with the leg-like pectoral fins does not fail to raise interest. There are about a dozen species, two of which are endemic to the State. One of these is *Echinophryne glauerti* which is occasionally found washed up on City Beach.

Leatherjackets (Monacanthidae) are a large group distinguished by the rough leathery skin and a single large erectile spine on the nape. Some species, like *Chaetoderma penicilligera*, are common and of attractive appearance.

Of the blowfish family, the common Blowie (*Tetraodon* (*Spheroides*) *pleurogramma*) needs special mention ; it is extremely plentiful off the coast at Fremantle and in the Swan River Estuary. It is poisonous to eat and is greatly disliked by anglers who find that it greedily takes their bait. Fishes of this family contain a poisonous substance called Tetraodon toxin and the celebrated navigator Captain James Cook was very ill after eating a blowfish in the course of a voyage in the Pacific in 1774. Box-fishes (Ostraciontidae) and porcupine fishes (Diodontidae) are related groups, each represented by a number of species.

Further information about the commercial fishes in Western Australian waters is given in the Fisheries section of Chapter VIII, Part 1—*Primary Production.*

THE INVERTEBRATE FAUNA

The invertebrate fauna of Western Australia is large and varied, as one would expect in a third of a continent which extends from temperate to tropical zones and includes both coastal and desert areas. Rather than spread our descriptions too thinly over this enormous field we have restricted ourselves to a brief summary of the position in relation to a few selected groups in which work is being actively carried out.

Several invertebrate species are commercially exploited here, the most important being the marine crayfish (*Panulirus cygnus*) which supports an extensive export fishery. Others commercially important include several species of octopus and squid, the Blue Swimming Crab (" Blue Manna ", *Portunus pelagicus*) and several species of prawns. Pearl-shell is fairly extensively fished along the north-west coast.

A summary of the terrestrial and freshwater invertebrate fauna and their ecology is given in Main's *Guide for Naturalists* (1954).

Echinodermata (6)

The echinoderms of Western Australia have been shown by Clark (1946) to be derived from the Indo-Malayan fauna. Most species of northern Australia are widely distributed in the Indian Ocean and Malayan archipelago, while as one passes southwards these decrease in proportion to the endemic species until on the south-western coast nearly nine-tenths of the echinoderms are endemic to the region.

All five groups of echinoderms, feather stars (Crinoidea), sea stars (Asteroidea), brittle stars (Ophiuroidea), sea urchins (Echinoidea), and sea cucumbers (Holothuroidea) are well represented. Eighty-five species of sea stars and fifty-five species of sea urchins are recorded from Western Australia including the continental shelf. The other groups have smaller numbers of species.

On the rocky and sandy shores of the South-West about twenty species of sea stars are common in shallow water. One of the most abundant is *Coscinasterias calamaria* which is widely distributed in the Southern Hemisphere. Sea urchins are represented by about twelve common species ; on rocky shores the most abundant of these is *Heliocidaris erythrogramma* which has a southern Australian distribution.

In Cockburn Sound, between Garden Island and the mainland south of Fremantle, an abundant but specialized echinoderm fauna exists. This consists mainly of the small sea urchin (*Temnopleurus michaelseni*), the biscuit urchin (*Peronella lesueuri*), the heart urchin (*Echinocardium cordatum*) and the sea star (*Stellaster inspinosus*). On the south coast, King George Sound has long been known as a rich collecting ground for echinoderms, but the fauna of other bays and inlets is much less well-known.

Little is known of the echinoderm fauna of the northern coasts, and almost all that we do know comes from the publications of H. L. Clark (see bibliography at the end of this Part) who collected extensively in the Broome area and made smaller collections in other places. Near Broome, a wide variety of echinoderms was collected in his dredges and along the shore.

Mollusca (6)

The molluscan fauna of the Western Australian coastline has not been recently catalogued, but from the area within 35 miles of Fremantle 270 species of bivalves (Pelecypoda), and univalves (Gastropoda) are recorded. The smaller groups, chitons (Amphineura), octopus and cuttlefish (Cephalopoda) and tusk shells (Scaphopoda), are also represented.

Molluscs dominate the intertidal rocks of the west coast, especially chitons, periwinkles, and limpets ; the limpets range from the very large *Patellanax laticostata* to the small *Notoacmea onychitis*. On the north-western coast, rock oysters (*Crassostrea tuberculata*) and barnacles take the place of limpets intertidally. The oysters are fished commercially for food on a small scale in places where extensive beds are uncovered at low tide.

Bivalves occur mainly on sandy and muddy bottoms such as those of Cockburn Sound and King George Sound, and along the north-western coast. They are less plentiful on the unstable sandy shores of the open western coast. The pearl-shell fishery of north-west Australia is based on several species, mainly the Black-lipped Pearl-shell (*Pinctada margaritifera*) and the Silver-lip (*P. maxima*). The Shark Bay Pearl-shell (*P. carchariarium*) is abundant in Shark Bay and has been fished there commercially.

Many species of cowrie shells occur on the rocky shores of the north-west coast while a few species such as *Zoila friendii* and *Austrocyprea reevei* are confined to the south-western corner of the State.

Coelenterata (6)

This group includes the corals (Anthozoa), the hydroids (Hydrozoa) and jellyfish (Scyphozoa).

Reef-building corals occur on the north-western coast in abundance and form reefs as far south as the Abrolhos Islands (29°S), and Port Gregory (28°S) on the mainland. Further south, reef-building corals are few in number and occur as small reefs and as scattered colonies on islands off the coast, but not on the coast itself. The staghorn coral *Acropora* is plentiful around the Abrolhos Islands and at Port Gregory but it has not been found further south except in Pleistocene fossil beds on Rottnest Island. Two or three species of corals extend east of Albany, and one, *Plesiastrea urvillei*, occurs right along the south coast of Australia.

(6) Written in collaboration with Dr. E. P. Hodgkin and Mrs. L. Marsh.

Soft-corals are abundant on the muddy reefs of much of the north-west coast but few species occur on the west coast. The brightly-coloured fan coral *Mopsella* is common on rocky reefs of the west and south coasts.

Jellyfish of a few species, such as the white *Aurelia aurita* and the brown *Phyllorhiza punctata*, are common in the Swan River in summer. *Carybdea*, the small " sea-wasp ", occurs on the open coast.

Crustacea [7]

The most important commercial species of crustacean in Western Australian marine waters is the " Cray ", *Panulirus cygnus*. It occurs from North West Cape in the north to Hamelin Bay in the south. In the tropics five additional species of *Panulirus* occur ; these are collectively referred to as " Green Crays " (*Panulirus versicolor, P. ornatus, P. homarus, P. penicillatus* and *P. polyphagus*). On the southern coast occurs *Jasus lalandii*, which is the commercial species of crayfish in south-eastern Australia, but it is not of economic importance in this State.

The Swan River Prawn or School Prawn (*Metapenaeus dalli*) occurs on the west coast of this State and extends into Indonesian waters. In Exmouth Gulf and in Shark Bay two species of tropical prawns are caught commercially. These are the Tiger Prawn (*Penaeus esculentus*) and the Banana Prawn (*Penaeus merguiensis*). The Western King Prawn of the south is *P. latisulcatus*.

The Blue Swimming Crab (*Portunus pelagicus*), plentiful in the summer in the estuaries of the Swan River and at Mandurah, is one of the common commercial crabs of Australia.

Two common species of crab are the Rock Crab (*Leptograpsus variegatus*) and the Ghost Crab (*Ocypode pygoides*). The Rock Crab scrambles among rocks and jetty piles of the west and south coasts, whereas the Ghost Crab digs near-vertical burrows at the edge of the beach and is endemic to the west coast.

Of the many other species of non-commercial crustaceans some groups have been recently monographed by scientific workers. These are the swimming crabs, mantis shrimps and pebble crabs.

Crustacea are also common in inland waters (see *Fauna of Inland Waters* earlier in this Part).

Spiders [8]

Like most other invertebrate groups, the spiders are represented by a large number of genera and species and it is not possible at this stage to give an accurate picture of the relationships of the Western Australian fauna to the rest of Australia. Early work on the Western Australian spiders was restricted to the description and naming of species. Research now is centred on investigations of the biology of various species and the special adaptations of endemic forms to the particular conditions of the Western Australian environment. The most interesting of the spiders, when viewed from this aspect, are the burrowing groups, including primarily the Mygalomorphae (" trapdoor " spiders) and the Lycosidae (Wolf spiders). Some of these forms show special adaptations to semi-arid environments, to reduced food supply, and to flash-flooding, such adaptations being paralleled in many taxonomically unrelated genera. It is also of interest that some families, which in other parts of the world and in the wet forests of Australia are primarily web weavers and litter dwellers, are burrowers in the arid parts of Western Australia (and also in other dry parts of Australia). Such forms are essentially nocturnal and escape the unfavourable conditions of the day by remaining in their burrows and some species seal their burrows during the summer period.

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The more important insect species occurring in Western Australia (particularly those of economic significance) are dealt with in Part 5 of this Chapter.

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PART 5 — ENTOMOLOGY IN WESTERN AUSTRALIA

WITH PARTICULAR REFERENCE TO AGRICULTURE

(*Contributed by C. F. H. Jenkins, M.A., Government Entomologist*)

The entomological field in Western Australia is so vast and the number of active workers on the subject so few that much still remains to be learned about the insects found in this State. A wide range of environmental conditions exists, from the tropical north to the temperate south, and the geographical isolation of the State has allowed the development of numerous endemic forms. As may be expected, the insect fauna of the Kimberley Division shows closer affinities with that of North Queensland than with the lower half of the State. The central desert, which reaches the coast to the south along the Great Australian Bight and to the north along the Eighty Mile Beach, forms an effective barrier discernible in the distribution of flora, mammals, insects and birds.

Owing to the limitations of space no attempt has been made to cover all the various insect orders which occur in the State, but the economic importance of various groups and their influence on major agricultural industries have been outlined, and some of the more outstanding forms of general interest have been mentioned.

CLASS INSECTA (Insects)

Order Collembola (Springtails)

The Springtails include the Lucerne Flea (*Sminthurus viridis*) which was introduced into this State from eastern Australia in about 1910. It has spread to almost all the clover-growing areas in the South-West and is a very serious pasture pest. Partial control is exercised by a predatory mite, *Biscirus lapidarius*.

Order Orthoptera (Grasshoppers, Locusts, Cockroaches, Mantids, etc.)

The grasshoppers and locusts are represented by a large number of different species. The most important pest form is the Small Plague Grasshopper (*Austroicetes cruciata*). The normal habitat of this species lies roughly between the 10 in. and the 15 in. isohyets. For breeding it favours hard bare soil and as extensive areas once utilized for wheat growing have now reverted to grazing, these uncultivated tracts periodically give rise to serious grasshopper swarms, which menace the adjacent wheat lands. The Australian Plague Locust (*Chortoicetes terminifera*) so troublesome in other States occurs in Western Australia but not as a plague species. In the Kimberley the Yellow-winged Locust (*Gastrimargus musicus*), the Migratory Locust (*Locusta migratoria*) and the Spur-throated Locust (*Austracris guttulosa*) assume plague proportions, but in the southern agricultural districts they occur in the solitary phase only. The Praying Mantids (*Mantidae*) are represented by many different species. Their well-developed fore-limbs are admirably adapted for catching prey and, like their foliage-feeding relatives the Phasmids or leaf insects (*Phasmatidae*), their colouring harmonizes remarkably with the sticks and leaves on which they rest.

Order Isoptera (Termites)

The so-called White Ant is a serious pest in all parts of the State. Earth-dwelling types occur mainly, and among the most important species may be cited the large *Mastotermes darwiniensis* of the north and the widely distributed *Coptotermes acinaciformis*. The large mounds of the grass-eating *Nasutitermes triodiae* are characteristic of certain landscapes in the pastoral areas. Heavy annual losses are caused by termite damage and the use of such chemicals as Dieldrin, Aldrin, Chlordane and Creosote is recommended for the protection of timber structures.

Order Anoplura (Lice)

Indigenous species occur on birds and native mammals, and various introduced forms infest domestic poultry, horses, cattle and sheep.

Order Thysanura (Thrips)

This order is represented locally by a large number of native species as well as several introduced forms. The most serious native species is *Thrips imaginis* which may swarm in apple blossoms and seriously affect the crop setting.

Thrips tabaci, often called the Tobacco or Onion Thrips, is a carrier for the plant disease Spotted Wilt. Severe damage to tomato plants may result from this virus.

Order Hemiptera (Bugs, Aphis, Scale Insects)

This group contains a large number of pest species, many of them introduced. A serious vegetable pest is the Green Bug (*Nezara viridula*) which is partially controlled by an introduced wasp parasite, *Microphanurus basalis*. The native Rutherglen Bug (*Nysius vinitor*) may at times swarm on vegetables and fruit trees, but seems less serious in this State than on the other side of the continent. The Crusader bug (*Mictis profana*), so named because of the light-coloured St. Andrew's cross on the back of the adult, feeds normally on Acacias and other native plants, but it frequently invades cultivated areas and it may be troublesome to young citrus.

One native aphis (*Anomalaphis comperei*) has been recorded. The only two districts from which it has so far been collected are Albany and Karridale where it has been found infesting native peppermint (*Agonis flexuosa*). A point of interest about these occurrences is that the aphis were associated with a heavy Argentine Ant infestation in the area. Since the removal of the Ants, following Dieldrin spraying, no further aphis have been discovered.

Numerous introduced species occur as pests on vegetables, garden plants and fruit trees, *e.g.*, *Myzus persicae* (peaches, potatoes, etc.), *Toxoptera aurantii* (citrus), *Brevicoryne brassicae* (cabbages, cauliflowers, etc.), *Eriosoma lanigerum* (Woolly Aphis of apples). A recent record which may prove of some importance is *Aphis craccivora*. This insect carries a virus disease of subterranean clover known as " stunt."

Of the native coccids the gall-forming members of the genus *Apiomorpha* are among the most remarkable. The woody galls in which the female insects pass their days vary from small structures a fraction of an inch across to woody knobs the size of an apple. From an economic point of view, however, the various introduced scale insects demand most attention. Included in the list of pest species are the following :—

San Jose Scale (*Quadraspidiotus perniciosus*), which is a serious pest of apples.

Citrus Red Scale (*Aonidiella aurantii*), found mainly on citrus but with a wide host range.

Olive Scale (*Saissetia oleae*), found attacking citrus, stone fruits and garden shrubs.

White Wax Scale (*Ceroplastes destructor*), which is mainly a pest of citrus but which attacks many cultivated shrubs.

Soft Brown Scale (*Coccus hesperidum*), which has a wide host range but is of greatest importance on citrus.

Order Coleoptera (Beetles)

This order is the dominant one among existing insects and is represented in Western Australia by many and varied forms. The carnivorous ground beetles or Carabidae are widely distributed, one of the best-known species being the bright green Stink Beetle (*Calosoma schayeri*).

The Tiger Beetles (Cicindelidae) are of interest not only because of the metallic colouration seen in many forms but because of their association with the inland salt-lakes. The larvae are subterranean and may be collected by digging on the lake margins.

The Ladybirds (Coccinellidae) comprise a group of considerable economic importance and in addition to native species the State contains a number specially introduced to combat various scale insects and aphides. Among the best known of the introduced species are *Cryptolaemus montrouzieri* and *Leis conformis*. The Larvae of *Cryptolaemus* are covered with a whitish material which makes the insect superficially resemble the Mealy Bugs upon which it feeds. *Leis conformis* in conjunction with the wasp parasite *Aphelinus mali* plays an important role in combating the Woolly Aphis of apple trees. Destructive leaf-eating Ladybirds belonging to the genus *Epilachna* were until recently found only in the northern parts of the State where they attack vegetables, especially pumpkins and melons. In 1956, specimens of *Epilachna* were collected in Perth. Since then they have become established in several suburban areas, but how the introduction occurred is not known.

The Jewel Beetles (Buprestidae) contain some of the most colourful beetles to be found anywhere in the world. Western Australia is particularly rich in species and at times the beetles may be found in large numbers on flowering mallee and sand plain flora. One of the commonest is the metallic green *Stigmodera gratiosa*, and one of the largest is *Julodimorpha bakewelli*, measuring almost three inches in length. Although the beetle larvae are wood borers, closely resembling the " bardee " in appearance and habits, they are of little economic importance.

The Cockchafers or Scarabs (Scarabaeidae) are represented by a great diversity of forms. Several species may swarm on to flowering fruit trees and roses in the early summer and are popularly known as Spring Beetles. The bronze-coloured *Colymbomorpha lineata* is a common pest of apple trees during the blooming period and the Saddle-backed Beetle (*Phyllotocus ustulatus*) sometimes visits citrus blossoms in large numbers. An introduced species commonly known as the Black Beetle (*Heteronychus sanctae-helenae*) has gained a firm footing in the State and is a troublesome pest of lawns and turf. It is also growing in importance as a pest of vegetables in some areas. A native species *Colpochilodes sp.* has recently caused damage to cereal crops and clover pastures and is apparently increasing in certain clover districts in the southern portions of the State.

The Longicorn Beetles (Cerambycidae) are a group of wood-boring insects represented by a number of different species. They are often blamed for the death of forest eucalypts, although investigations have shown that heavy beetle infestations are usually secondary and that healthy trees are seldom seriously affected by the beetles. The larval stage of this group is the so-called " bardee ", one time prized by the aborigines as food. They are not a pest of structural timber as they do not attack seasoned material.

The Leaf Beetles (Chrysomelidae) may superficially resemble Ladybirds in general appearance as some of them are rounded and quite brightly coloured. Two species have been introduced into the State for the purpose of combating St. John's Wort, a troublesome weed spreading in some districts. *Chrysomela gemellata* and *C. hyperici* were originally introduced into Australia from the South of France and liberated in Victoria with very satisfactory results. The local colonies were obtained from the latter source and have become established in several districts. In some situations a reduction in St. John's Wort can be attributed definitely to beetle activity, but in many areas the picture is obscure due to the extensive use of chemical sprays.

A common pest species in eastern Australia is the Pumpkin Beetle, *Aulacophora hilaris*. This beetle is found in the north of the State but does not extend into the cooler latitudes.

The Weevils (Curculionidae) are a very specialized group characterized by the presence of a rostrum or " snout " which bears the mouth and antennae. The genus *Baryopodus* (*Leptops*) contains a number of large greyish weevils, many of which breed in association with Acacias. One of the best known members of the family is *Catasarcus rufipes* which feeds on eucalypt foliage and may disfigure young street trees. The almost world-wide Rice Weevil (*Calandra oryzae*) is our principal pest of stored grain, but the Granary Weevil (*C. granaria*) also occurs.

Order Hymenoptera (Bees, Wasps, Ants)

The Saw Flies (Tenthredinidae) are represented locally by a number of native forms. The larvae of the genus *Perga* may often be seen in caterpillar-like clusters amongst the foliage of eucalypts. An introduced Saw Fly (*Caliroa limacina*) is a common pest on pear and plum trees. The smaller parasitic wasps (Ichneumons and Chalcids and their allies) are well represented and play an important role in combating many insect pests. Some attack caterpillars, some aphis and scale insects and others insect eggs, so that without their aid the problem of pest control would be even more difficult than at present.

The ant fauna (*Formicidae*) of the State is extremely varied. One of the best-known native species is the Meat Ant or Mound Ant (*Iridomyrmex detectus*) which often nests on gravel paths and road-sides. Among the most remarkable of the local ants may be listed *Camponotus inflatus*, the Honey-pot Ant of the interior, and *Myrmecia regularis* of the karri forest area which has the frog *Metacrinia nichollsi* as a tolerated guest in its nest. The Honey-pot Ant derives its name from the fact that certain individuals in the nest store honey until their abdomens become inflated to the size of grapes. This honey is then regurgitated to other ants as required. These ants were once prized by the natives as a food delicacy.

Two important introduced ant pests are the Argentine Ant (*Iridomyrmex humilis*) and the Singapore Ant (*Monomorium destructor*). The Argentine Ant was once widespread in the metropolitan area, Albany and Bunbury, with several other country outbreaks. The insect has been reduced in recent years, however, as a result of a large-scale control campaign. A five-year control scheme against the Ant, with provision for an annual expenditure of £105,000 per annum was inaugurated in 1954. The scheme involved the spraying with Dieldrin of all known infested areas, which were originally estimated to cover approximately 25,000 acres. During the course of the campaign further outbreaks were discovered, giving an estimated total of 45,000 acres and, in consequence, a year's extension of the campaign was authorized by Parliament. As a result of this a total of over 44,000 acres have been sprayed and the Ant menace has been removed from the city and suburbs and most country districts. However, an area of almost impenetrable swamp country north of Perth still harbours the Ants. To prevent spread from this area

and to deal with any survivals or later introductions, a " continuance scheme " financed from Consolidated Revenue was approved. Approximately 3,000 acres consisting of survivals and new infestations in metropolitan and country areas have been treated under this programme.

The Social Wasps (*Vespidae*) were, until recently, known only from the northern portion of the State. About 10 years ago, however, colonies of *Polistes variabilis* were located in various parts of the suburban area and they have now extended to some of the orcharding districts in the Darling Range. How the introduction occurred is not known.

The Burrowing Wasps, including the Sand Wasps (Psammocharidae), the Flower Wasps (Thynnidae), the Hairy Flower Wasps (Scoliidae) and Solitary Ants (Mutillidae) are well represented. The latter are, of course, not true ants but the wingless females bear a superficial resemblance to ants which is further accentuated by their ability to inflict a painful sting. The Flower Wasps are particularly numerous and winged males carrying wingless females are common around flowering plants in the early summer. Of the " Solitary Ants " the black and white *Ephutomorpha cribricollis* is the best known. Most of the wasps mentioned are beneficial, for they store caterpillars and other insects in mud nests and underground burrows to serve as food for the wasp grubs.

The majority of native bees are solitary forms although some, like the Colletidae, often choose a common site for nest burrowing and hundreds of tunnels may be located close to one another.

The Leaf-cutting Bees (Megachilidae) often attract notice from their habit of cutting circular pieces from rose leaves and other foliage for use in nest construction.

The only native social bees belong to the genus *Trigona* which does not occur in the southern portions of the State.

Order Neuroptera (Lacewings)

This order contains a number of useful insects, for many of the Neuropterous larvae feed upon scale insects and other pests. The family Myrmeleontidae has a number of large, rather Dragonfly-like species, the larval stages of which build conical sand pits and are commonly known as Ant Lions. Amongst the most remarkable of the local Lacewings are two members of the family Nemopteridae in which the hind wings are greatly modified. In the genus *Croce* they are long and thread-like and in the Spoon-winged Lacewing (*Chasmoptera hutti*) they are spoon-shaped or paddle-shaped.

Order Diptera (Flies)

This group contains a vast number of species, many of which are of major economic importance.

The Mosquitoes are well represented, the commonest species being the Domestic Mosquito (*Culex fatigans*) and the Yellow-fever Mosquito (*Aedes aegypti*). The latter species is the carrier for Dengue fever in the northern portion of the State. The Anophelines are represented by the widely distributed *Anopheles annulipes* and several much rarer forms. *A. annulipes*, together with *Aedes alboannulatus*, have played an important part in the spread of the rabbit virus *Myxomatosis*.

Of the introduced flies, those causing most trouble are the Australian Sheep Blowfly (*Lucilia cuprina*) and the Mediterranean Fruit Fly (*Ceratitis capitata*). The Buffalo Fly (*Siphona exigua*) is a serious stock pest in the Kimberley Division of the State, but so far has not become established in the cattle areas of the south. It is believed to have originally reached Australia on buffaloes introduced from Asia.

The common House Fly (*Musca domestica*) is widespread as is also the native Bush Fly (*Musca sorbens*). Despite its common occurrence and extremely wide range, the natural breeding habits of the latter fly are not known.

Modern insecticides such as DDT, Dieldrin and the various organic phosphates gave outstanding control of various fly pests for several years. The widespread development of resistance in both housefly and blowfly populations has greatly complicated the matter, however, and drawn attention to the importance of preventive measures, such as sanitation in the case of houseflies, and the Mules operation and crutching in the case of the sheep blowfly.

The March flies (*Tabanidae*) are well represented but, although their blood-sucking habits render them annoying, both to livestock and humans, they are not a serious pest.

Of the many useful flies may be mentioned the Blowfly-like Tachinids which parasitize caterpillars, grasshoppers and other pests and the Bee Flies (*Bombyliidae*) which parasitize the eggs of other insects. The maggots of the Bombylid Fly (*Cyrtomorpha flaviscutellaris*) are commonly found in the egg pods of the Small Plague Grasshopper (*Austroicetes cruciata*).

Order Siphonaptera (Fleas)

A number of introduced as well as native fleas occur in this State. *Echidnophaga myrmecobii*, found originally on native mammals, is a very common parasite of rabbits in the drier parts of the State. The Fowl Stickfast Flea (*E. gallinacea*) closely resembles the former species but is mainly a pest of poultry and domestic animals. The Rat Flea (*Xenopsylla cheopis*), the Human Flea (*Pulex irritans*) and the Cat and Dog Fleas (*Ctenocephalides felis* and *C. canis*) are among the most important introduced species.

Order Lepidoptera (Moths, Butterflies, etc.)

The primitive Swift Moths (Hepialidae) are represented locally by a number of very beautiful forms. The larvae are wood borers but do not occur in sufficient numbers to constitute a serious forestry pest. Several large and striking members of the genus *Charagia* occur in the lower South-West.

A group of small native moths belonging to the family *Crambidae* and commonly known as Webworm Moths (*Talis pedionoma*, *T. pantucha*, etc.) is a serious pest of cereal crops (excepting oats) and grass pastures. Depredations are controlled by planting on clean fallow, but the recent trend towards ley farming has greatly favoured these pests.

A family of considerable interest to the orchardist is the Eucosmidae, for to this group belong the Codling Moth (*Cydia pomonella*) and the Oriental Fruit Moth (*C. molesta*). Outbreaks of Codling Moth have occurred on a number of occasions, but drastic eradication measures have so far prevented this major apple pest from becoming permanently established and have given Western Australia the distinction of being the only large apple-producing country where the moth is not a major problem.

One of the best represented families is the Noctuidae (Cutworms) which contains several important pests. Included under this heading are the Climbing Cutworm (*Heliothis punctigera*), the Common Cutworm (*Agrotis munda*) and the Army Worm (*Persectania ewingii*). One of the most remarkable members of the group is the Whistling Moth (*Hecatesia fenestrata*). The male of this species is active just at sunset and makes a loud clicking noise during its fast circling flight. The Orange Piercing Moth (*Othreis materna*) also belongs to this group and causes heavy losses in citrus fruit grown around pastoral homesteads in the Kimberley and the North-West. In almost all cases where moths and butterflies are regarded as pests it is only the caterpillar stage which is destructive. The Orange Piercing Moth, however, has a rasp-like proboscis capable of piercing orange and citrus skins and then sucking up the juice. Fortunately the creatures do not normally range to the citrus areas of the South-West.

Other common moth pests are the Cabbage Moth (*Plutella maculipennis*), the Potato Moth (*Gnorimoschema operculella*) and the Apple Looper (*Chloroclystis laticostata*).

The beautiful *Carthaea saturnioides* with its large eye spots on the wings superficially resembles the Emperor Moths. Its range is restricted to south-west Australia and the creature is much prized by collectors.

The butterfly fauna of the State lacks many large and showy forms. Some of the northern species such as *Hypolimnas bolina nerina* are quite colourful but the State has nothing to compare with the conspicuous and beautiful species found in the tropics of eastern Australia.

The Blues (Lycaenidae) are well represented and the association of many larvae with ant nests renders the group a particularly interesting one.

The Skippers (Hesperiidae) are relatively drab-coloured butterflies with strong powers of flight. Over 20 species are recorded from the State and some forms are endemic to the South-West.

Only one butterfly is of economic importance and that is the introduced Small Cabbage White (*Pieris rapae*) which reached this State in 1943. It attacks cabbages, cauliflowers and related plants as well as one or two other strong-tasting herbs such as watercress. The butterfly belongs to the whites, or Pieridae, which group contains a number of native species. Several members of this family, including the introduced Cabbage White, display extraordinary powers of flight and the native Caper White (*Anaphaeis java*) has been observed to carry out mass migrations of remarkable proportions on the eastern side of the continent.

CLASS ARACHNIDA (Spiders, Mites, Ticks, etc.)

Creatures grouped under the above heading are, of course, not true insects and will be dealt with only very briefly. Several forms are of considerable economic importance, as for example the Cattle Tick (*Boophilus microplus*) and the Fowl Tick (*Argas persicus*). The Cattle Tick is confined to the Kimberley Division and its range corresponds roughly with that of the Buffalo Fly. The Ornate Kangaroo Tick (*Amblyomma triguttatum*) is a common species. It is occasionally collected as an accidental parasite on domestic animals and man.

The most serious mite pest is the Red-legged Earth Mite (*Halotydeus destructor*) which is very destructive to young legumes and other seedlings. It may be particularly troublesome on subterranean clover pastures.

Spiders constitute a large group, most of which are useful on account of their insectivorous habits, although bites from some of the larger species may produce painful after-effects. The most dangerous local spider is the Red-backed Spider (*Latrodectus hasseltii*). This species, whose bite may even prove fatal, is easily recognized by the conspicuous red streak down the centre of the abdomen.

Scorpions of various kinds are widely distributed over the State and the larger ones may be able to inflict a painful sting. There is one record of a baby dying at Pemberton from the effects of scorpion venom but no other reports of serious after-effects are available and, generally speaking, the group is of little local importance.

FURTHER SOURCES OF INFORMATION

The difficulties confronting anyone trying to review in a few pages the entomological fauna of such a large State as Western Australia will be better appreciated if it is remembered that in the *Western Australian Year-Book for* 1898–99 the late A. M. Lea expressed the opinion that there were about 30,000 species of insects indigenous to this State. Many additions have been made in the last fifty years and one is faced with the problem of deciding which creatures warrant special mention and which must be excluded for lack of space. The general reader interested in consulting other short reviews of the local insect fauna is referred to A. M. Lea's article in the 1898–99 Year Book under the title of " The Insects of Western Australia " ; in the Year Book for 1900–01 the late H. M. Giles wrote " A Glimpse of Western Australian Entomology."

Two short summaries have also appeared in conjunction with science conferences in this State. The Handbook and Review published for the 1926 meeting of the Australasian Association for the Advancement of Science contained an article by L. J. Newman and the Handbook for the 1947 meeting of the Australian and New Zealand Association for the Advancement of Science printed a short summary of the local insects by L. Glauert.

Readers interested in more technical summaries are referred to Professor G. E. Nicholl's " The Composition and Biographical Relation of the Fauna of Western Australia " (*A.N.Z.A.A.S.*, Vol. XXI, 1933, p. 93), the relevant volumes of *Die Fauna Südwest-Australiens* by Michaelsen and Hartmeyer, 1907-1930, and the report of the Swedish expedition under Dr. E. Mjöberg.

More detailed information relating to the forms of economic importance will be found in the publications of the Western Australian Department of Agriculture.

Books covering the general aspects of Australian Entomology include :—

BARRETT, C. and BURNS, A. N. (1951)—*Butterflies of Australia and New Guinea.* N. H. Seward Pty. Ltd., Melbourne. 187 pp.

McKEOWN, K. C. (1945)—*Australian Insects* An Introductory Handbook. Published by R.Z.S. of N.S.W., Sydney. 303 pp.

TILLYARD, R. J. (1926)—*The Insects of Australia and New Zealand.* Angus and Robertson Ltd., Sydney. 560 pp.

WATERHOUSE, G. A. (1932)—*What Butterfly is That.* A Guide to the Butterflies of Australia. Angus and Robertson Ltd., Sydney. 291 pp.

CHAPTER II — *continued*

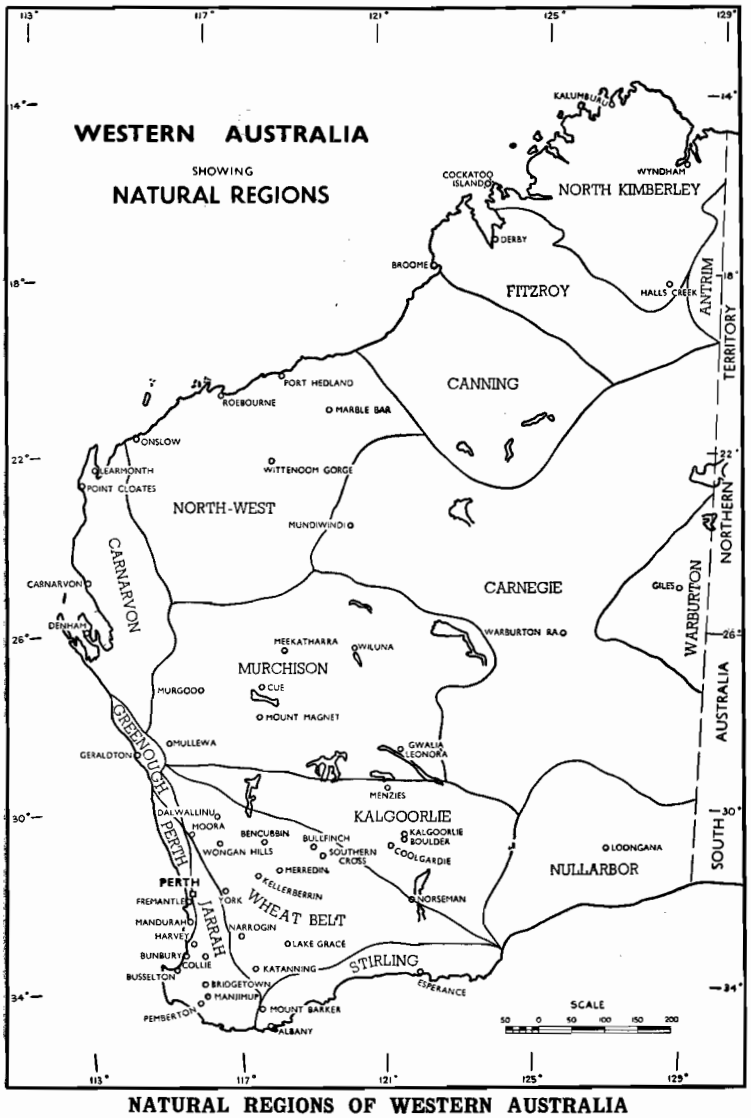
PART 6 — NATURAL REGIONS

Contributed by

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The physical features, geology, climate, flora and fauna of Western Australia have been outlined earlier in this Chapter and the subdivision of the State into " natural regions " may now be considered. A Natural Region is one clearly marked off from neighbouring regions by topographical, geological, climatic, or biological conditions, or by combinations of these, so that, as far as Man's activities are concerned, they have different economic possibilities. The subdivision of Western Australia into Natural Regions (*see* map below) has been described by E. de C. Clarke (*Jour. Roy. Soc. West. Aust., vol. XII, pp.* 117–132) and a summary of the characteristics of these different Natural Regions (reprinted by courtesy of the University of Western Australia Press from Clarke, Prider, and Teichert: *Elements of Geology for Western Australian Students*) is given in the accompanying table.



NATURAL REGIONS OF WESTERN AUSTRALIA

(after E. de C. Clarke, Jour. Roy. Soc. of West. Aust., vol. XXII)

CHARACTERISTICS OF THE NATURAL REGIONS OF WESTERN AUSTRALIA

NATURAL REGION	TOPOGRAPHY	GEOLOGY	RAINFALL	WATER SUPPLY ‡	VEGETATION, ETC.
ANTRIM (*geographic*)	Tableland	Cambrian sediments and lavas	Summer, monsoonal 20 in. to 40 in.	Catchments, wells and artesian	Grassland and savannah
NORTH KIMBERLEY (*geographic*)	Dissected stony tableland	Younger Precambrian	Summer, monsoonal 30 in. or more	Streams, springs, catchments	Luxuriant in valleys, sparse on tableland
FITZROY (*chief river*)	Very wide valleys and low hills	Palaeozoic (largely Permian)	Summer, monsoonal 20 in. to 30 in.	Catchments and artesian	Grassland and savannah
CANNING (*A. W. Canning, surveyor and explorer*)	Sand ridges and table-top hills	Palaeozoic and Mesozoic	Summer, 15 in. or less	Springs, pools, artesian water ? (undeveloped)	"Spinifex" (species of *Triodea*) and desert shrubs
CARNEGIE (*David Carnegie, explorer*)	Sand ridges and table-top hills	? Tertiary (sandy) and ? Younger Precambrian	Variable and unreliable, probably about 5 in.	Catchments	"Spinifex" and desert shrubs
WARBURTON (*Warburton Range*)	Hills (some over 3,000 feet) separated by sandy country	Older Precambrian	Variable and unreliable; perhaps about 5 in. Probably better than Carnegie Region owing to high hills	Catchments, some springs	"Mulga" (species of *Acacia*) and "Spinifex"
NORTH-WEST (*common usage*)	Rugged hills; rivers in well-defined valleys	Younger and Older Precambrian. Many economic minerals	Variable, unreliable, 15 in. or less	Wells, catchments, pools	"Spinifex," few shrubs and trees
MURCHISON (*common usage*)	Ridge hills and breakaways. Rivers in shallow beds. Salt "lakes"	Older Precambrian. Economic minerals especially gold	Summer or winter, unreliable, 10 in. or less	Wells (potable groundwater)	"Mulga." Eucalypts scarce except along rivers

KALGOORLIE (*chief town*)	Less hilly than Murchison. Salt "lakes." No defined watercourses except salt lake system	Like Murchison Region	Mainly winter. Unreliable. 10 in. or less	Catchments. Ground water too salt for use	Eucalypt forest, especially Salmon Gum (*E. salmonophloia*), Gimlet (*E. salubris*) and Red Morrel (*E. longicornis*)
WHEAT BELT (*common usage*)	Same as Kalgoorlie Region	Older Precambrian, but few "greenstones"	Winter, reliable, 10 in. to 20 in.	Similar to Kalgoorlie Region, but ground water potable in many places; therefore wells frequent	Eucalypt forest — Salmon Gum, Gimlet, and Morrel
JARRAH (*chief timber*)	More dissected than Wheat Belt Region, especially near Darling Scarp	Like Wheat Belt Region but there is an extensive cuirass of laterite	Winter, reliable, 25 in. to 40 in.	Streams and springs	Forest of Jarrah (*E. marginata*), Wandoo (*E. reduncа*), Karri (*E. diversicolor*) and Marri (*E. calophylla*)
CARNARVON (*chief town*)	Elevated plain with table-top hills	Palaeozoic, Mesozoic, Tertiary and later	Summer or winter; very unreliable; about 10 in.	Artesian in many places. Catchments, pools	Sparse scrub in north, denser in south
GREENOUGH (*river*)	Sandstone tableland	Mesozoic and older	Winter, 15 in. to 20 in.	Springs, wells and catchments	Scrub
PERTH (*chief town*)	Coastal plain	Mesozoic and later	Winter, reliable; 20 in. to 35 in.	Springs, wells, artesian	Scrub, swamp and forest
STIRLING (*prominent range*)	Undulating tableland with abrupt ranges	Siliceous Tertiary sediments with inliers of younger and older Precambrian	Winter, 15 in. or less	Catchments, stream water generally too salt for use	Heath and swamp
NULLARBOR (*geographic*)	Tableland, no hills	Calcareous Tertiary sediments	Winter, 10 in. or less	Catchments. Sub-artesian	Poor grassland

‡ "Wells" refers to those that draw on ground water, but are not artesian. "Catchments" refers to water collected on the surface—naturally in gnamma holes, artificially by conserving the run-off. "Pools" refers to pools in watercourses and includes rock holes.

CHAPTER III—CONSTITUTION AND GOVERNMENT

Western Australia is one of the six federated sovereign States which, together with the Northern Territory and the Australian Capital Territory, constitute the Commonwealth of Australia. Thus, in addition to having its own Parliament and executive government, it is represented in the federal legislature. As well as government at the Federal and State levels, there is a third system, that of local government, which functions through City Councils, Town Councils and Shire Councils.

OUTLINE OF CONSTITUTIONAL DEVELOPMENT

A Legislative Council was established in Western Australia shortly after its foundation as a Crown Colony and sat for the first time in February, 1832. The Council was non-elective and consisted of the Governor and four senior officials. In 1839, membership was increased to nine when the Governor nominated four unofficial members. Additional appointments were made from time to time until the dissolution of the nominee Legislative Council in 1870 with the inauguration of representative government as provided for in the Australian Colonies Government Act of 1850. This Act, which enabled the establishment of representative governments in other Australian Colonies, withheld the privilege from Western Australia until such time as the Colony should be able to defray all costs of government from its own revenues, and it was not until 1870 that it was felt that Western Australia was able to satisfy this condition. The new Legislative Council, elections for which took place in October of that year, consisted of twelve elected members, three nominees and three officials. The number of members of the Council was increased in 1874 to 21, of whom 14 were elected, in 1882 to 24, of whom 16 were elected and in 1886 to 26, comprising 17 elected members, five nominees and four officials.

Following the passage by the Legislative Council of a Constitution Act in 1889 and subsequent representations made in London by delegates sent from the Colony, responsible government was granted to Western Australia by an Imperial Act assented to on the 15th August, 1890. Provision was made for the establishment of a Parliament of two Houses, to be known as the " Legislative Council " and the " Legislative Assembly," to replace the old Council. Proclamation of responsible government was made in Perth on the 21st October, 1890 and election of the thirty members of the Legislative Assembly took place in November and December. The fifteen members of the Legislative Council were nominated by the Governor, as provided in the Constitution Act, and the Parliament was officially opened on the 30th December, 1890. The Constitution Act of 1889, while prescribing a Council which was originally nominative, contained a provision that, after the expiration of six years or on the population of the Colony reaching 60,000, the Council should become fully elective. The required population was attained in 1893 and an amendment to the Act in that year enabled the election of 21 members to the Legislative Council, and at the same time increased the Legislative Assembly to 33 members. By an amendment of 1899, membership of the Legislative Council was raised to 30 and of the Legislative Assembly to 50 and no change in these numbers has since been made.

On the 1st January, 1901, Western Australia and the five other Australian Colonies were federated under the name of the " Commonwealth of Australia," authority for the union having been given by the Commonwealth of Australia Constitution Act which was passed by the British Parliament in 1900. By a provision of the Constitution Act the constituent parts of the Commonwealth previously designated " Colonies " became known as " States." Under the Constitution, powers are divided between the Parliaments of the Commonwealth and of the States by conferring power in respect of specific subjects on the Commonwealth either exclusively or jointly with the States, leaving the remaining powers to the States.

Procedure in both Commonwealth and State Parliaments is based on British practice. The legislatures consist of the Sovereign, represented by the Governor-General of Australia or the Governor of the State, and the elected members. In the field of executive government the British " Cabinet " system has also been adopted. The members of the Cabinets must hold seats in the legislature as elected members. The Cabinet is responsible to the Parliament and continues in office only while holding the confidence of the Parliament. All Cabinet Ministers are members of the Executive Council, the supreme group of advisers to the Crown, and the Cabinet thus provides the executive government of the Commonwealth or the State. The Executive Council is presided over by the Governor-General of Australia or the Governor of the State and at its meetings, which are formal and official in character, the decisions

of the Cabinet are given legal form, appointments are made, resignations accepted, proclamations issued and regulations approved.

VICE-REGAL REPRESENTATION

The Governor-General of Australia

Under the Commonwealth Constitution, ultimate executive power is vested in the Crown and is exercised by the Governor-General as the direct representative of the Sovereign. Appointment to the office is made by the Crown after consultation with the Prime Minister of the Commonwealth. The present Governor-General is His Excellency the Right Honourable Viscount De L'Isle, V.C., P.C., G.C.M.G., G.C.V.O., K.St.J., who was sworn in on the 3rd August, 1961. During the absence from Australia of the Governor-General it is usual for the senior among the State Governors to be appointed Administrator.

The Governor of Western Australia

The Governor of Western Australia is the personal representative of the Sovereign in the State and exercises the powers of the Crown in State matters. He is the titular head of the Government and performs the official and ceremonial functions attaching to the Crown. The present Governor of Western Australia is His Excellency Major-General Sir Douglas Kendrew, K.C.M.G., C.B., C.B.E., D.S.O. In the event of the Governor's absence from Western Australia the Lieutenant-Governor of the State is appointed Administrator. The present Lieutenant-Governor is the Honourable Sir John Patrick Dwyer, K.C.M.G. If there is no Lieutenant-Governor it is customary for the Chief Justice to be appointed Administrator.

The last Governor of Western Australia as a Colony was Lieutenant-Colonel Sir Gerard Smith, K.C.M.G., whose term of office expired on the 29th June, 1900 and the first Governor of the State was Captain Sir Arthur Lawley, K.C.M.G., who was sworn in on the 1st May, 1901. The names and dates of assumption of office of Governors, Lieutenant-Governors and Administrators from that time are shown in the following list. The Honourable Sir John Dwyer, K.C.M.G., was commissioned as Lieutenant-Governor on the 8th April, 1952 and since that date has performed the functions of Administrator of the State during absences of the Governor.

GOVERNORS, LIEUTENANT-GOVERNORS AND ADMINISTRATORS FROM 1901 (*a*)

Name and Office	Date of Assumption of Office
Captain Sir Arthur Lawley, K.C.M.G., Governor	1901—1st May
Sir Edward Stone, Administrator	1902—14th August
Admiral Sir Frederick Bedford, G.C.B., Governor	1903—24th March
Sir Edward Stone, Administrator	1909—23rd April
Sir Gerald Strickland, K.C.M.G., Governor	1909—31st May
Sir Edward Stone, Administrator	1913—4th March
Major-General Sir Harry Barron, K.C.M.G., C.V.O., Governor	1913—17th March
Sir Edward Stone, K.C.M.G., Administrator	1917—27th February
Rt. Hon. Sir William Ellison-Macartney, P.C., K.C.M.G., Governor	1917—9th April
Sir Francis Newdigate-Newdegate, K.C.M.G., Governor	1920—9th April
Sir Robert McMillan, Administrator	1924—17th June
Colonel Sir William Campion, K.C.M.G., D.S.O., Governor	1924—28th October
Sir Robert McMillan, K.C.M.G., Lieutenant-Governor and Administrator	1929—7th January
Colonel Sir William Campion, K.C.M.G., D.S.O., Governor	1929—7th May
Sir John Northmore, K.C.M.G., Administrator	1931—9th June
Sir John Northmore, K.C.M.G., Lieutenant-Governor and Administrator	1932—30th June
Hon. Sir James Mitchell, K.C.M.G., Lieutenant-Governor	1933—11th July
Hon. Sir James Mitchell, G.C.M.G., Governor	1948—5th October
Hon. Sir John Dwyer, K.C.M.G., Administrator	1951—1st July
Hon. Albert Asher Wolff, Administrator	1951—7th August
Hon. Sir John Dwyer, K.C.M.G., Administrator	1951—28th August
Lieutenant-General Sir Charles Gairdner, K.C.M.G., K.C.V.O., K.B.E., C.B., Governor	1951—6th November
Hon. Sir John Dwyer, K.C.M.G., Lieutenant-Governor and Administrator	1963—27th June
Major-General Sir Douglas Kendrew, K.C.M.G., C.B., C.B.E., D.S.O., Governor	1963—25th October

(*a*) The names of the successive holders of these offices from the foundation of the Colony are shown on page 65 of the *Official Year Book of Western Australia*, 1957, *No.* 1—*New Series.*

THE FEDERAL PARLIAMENT

The legislative power of the Commonwealth is vested in a Federal Parliament which consists of Her Majesty the Queen (represented by the Governor-General), a Senate and a House of Representatives. Subject to the Constitution, the Commonwealth Parliament is empowered to make laws concerning, among other things, defence, external affairs, customs and excise, trade and commerce with other countries and among the States, taxation, borrowing of money on public credit, currency and coinage, banking, insurance, navigation, fisheries, quarantine, posts and telegraphs, census and statistics, immigration, naturalization and aliens, copyrights and trade marks, bankruptcy, marriage, divorce and matrimonial causes, social services, and conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State. The Constitution provides that, when a law of a State is inconsistent with a law of the Commonwealth, the Commonwealth law shall prevail and the State law shall, to the extent of the inconsistency, be invalid.

The qualifications necessary for membership of the Commonwealth Parliament and for voting at federal elections are described in the *Official Year Book of the Commonwealth of Australia.*

The payment of allowances to Senators and Members of the House of Representatives is provided for in the Constitution and a superannuation scheme is established under the provisions of the Parliamentary Retiring Allowances Act of 1948.

The Senate

The Senate consisted originally of 36 members, six Senators being returned from each State. The Parliament is authorized by the Constitution to increase or decrease the number of members. The growth of the population since Federation having been such as to warrant a considerable enlargement of the Parliament, a Representation Act was passed in 1948 to provide for increased membership by raising from six to ten the number of Senators from each State. At the same time the preferential system of counting of votes in elections for the Senate was altered by the Commonwealth Electoral Act to one of proportional representation, a summarized description of which is given in the *Official Year Book of the Commonwealth of Australia, No.* 38, pages 82–83.

Members are elected on the basis of adult suffrage by the people of the State which they represent. Enrolment as an elector is compulsory for qualified persons except aboriginal natives of Australia, who may, but in general are not required to, enrol. Voting is compulsory for all enrolled persons including Australian aboriginals. The term of office of a Senator is normally six years. One-half of the members retire at the end of every third year and are eligible for re-election.

Federal parliamentary elections were held on the 9th December, 1961. The Western Australian membership of the Senate before the election and at the 31st December, 1963 is shown in the following table.

WESTERN AUSTRALIAN MEMBERS OF THE SENATE

Before Election of 9th December, 1961			At 31st December, 1963		
Name	Political Party	Due Date of Retirement	Name	Political Party	Due Date of Retirement
		30th June :			30th June :
Paltridge, Hon. S. D.	Lib.	1962	Paltridge, Hon. S. D.	Lib.	1968
Robertson, Agnes R.	C.P.	1962	Prowse, E. W.	C.P.	1968
Tangney, Dorothy M.	A.L.P.	1962	Tangney, Dorothy M.	A.L.P.	1968
Vincent, V. S.	Lib.	1962	Vincent, V. S.	Lib.	1968
Willesee, D. R.	A.L.P.	1962	Willesee, D. R.	A.L.P.	1968
Branson, G. H.	Lib.	1965	Branson, G. H.	Lib.	1965
Cant, H. G. J.	A.L.P.	1965	Cant, H. G. J.	A.L.P.	1965
Cooke, J. A.	A.L.P.	1965	Cooke, J. A.	A.L.P.	1965
Drake-Brockman, ... T. C., D.F.C.	C.P.	1965	Drake-Brockman, ... T. C., D.F.C.	C.P.	1965
Scott, M. F.	Lib.	1965	Scott, M. F.	Lib.	1965

A.L.P. = Australian Labor Party. C.P. = Country Party. Lib. = Liberal Party.

The House of Representatives

State membership of the House of Representatives is on a population basis with the proviso that each State shall have at least five members. The Constitution provides further that the number of members of the House of Representatives shall be, as nearly as practicable, double the number of Senators. With the enlargement of the Senate from 36 to 60 members, the membership of the House of Representatives was increased, from the date of the 1949 elections, from 74 to 121, not including a member for the Australian Capital Territory, which achieved representation for the first time at this election, and a member for the Northern Territory, which had been represented since 1922. Western Australia's population growth had been such as to necessitate an increase in representation from five to eight, and this number was raised to nine in 1955 as a result of a redistribution following the Census of the 30th June, 1954. At the same time, the total number of members of the House of Representatives was increased to 122, excluding the two members for the Territories.

In a statement made to the House of Representatives on the 22nd February, 1962 the Minister for the Interior announced that, on the basis of population figures as disclosed by the Census of the 30th June, 1961, and under the provisions of the Representation Act 1905–1949, Western Australia, New South Wales and Queensland should each have one member less, and Victoria one additional member, in a House of Representatives of 120 members, excluding the member for the Northern Territory and the member for the Australian Capital Territory. The appointment of Distribution Commissioners to consider the necessary reallocation of Electoral Divisions, as required by the Commonwealth Electoral Act 1918–1961, was notified in the *Commonwealth of Australia Gazette* of the 12th April, 1962. The Commissioners' reports were presented to the Parliament on the 4th October, 1962.

A Government motion seeking approval of the Commissioners' recommendations in regard to New South Wales was put before the House of Representatives on the 29th November, 1962. It was announced by the Prime Minister on the 4th December, 1962 that, as a result of opposition encountered in the course of debate on the motion, the Government would not proceed with it and proposals for the redistribution in other States would not be presented to the Parliament. (*a*)

Members of the House of Representatives are elected for the duration of the Parliament, which is limited to three years, by the people of the electorate which they represent. Enrolment as an elector is compulsory for qualified persons except aboriginal natives of Australia, who may, but in general are not required to, enrol. Voting, which is on the preferential system, is compulsory for all enrolled persons including Australian aboriginals.

The following table shows the Western Australian membership of the House of Representatives before the election of the 9th December, 1961 and at the 31st December, 1962.

WESTERN AUSTRALIAN MEMBERS OF THE HOUSE OF REPRESENTATIVES (*a*)

Electorate	Before Election of 9th December, 1961		At 31st December, 1962	
	Name	Political Party	Name	Political Party
Canning	Hamilton, L. W.	C.P.	McNeill, N.	Lib.
Curtin	Hasluck, Hon. P. M. C.	Lib.	Hasluck, Hon. P. M. C.	Lib.
Forrest	Freeth, Hon. G.	Lib.	Freeth, Hon. G.	Lib.
Fremantle	Beazley, K. E.	A.L.P.	Beazley, K. E.	A.L.P.
Kalgoorlie	Browne, P. G.	Lib.	Collard, F. W.	A.L.P.
Moore	Halbert, H. V.	Lib.	Leslie H. A.	C.P.
Perth	Chaney, F. C., A.F.C.	Lib.	Chaney, F. C., A.F.C.	Lib.
Stirling	Cash, E. D.	Lib.	Webb, C. H.	A.L.P.
Swan	Cleaver, R.	Lib.	Cleaver, R.	Lib.

A.L.P. = Australian Labor Party. C.P. = Country Party. Lib. = Liberal Party.

(*a*) See *Appendix*.

THE STATE PARLIAMENT

The Crown, represented by the Governor, and the Parliament, comprising a Legislative Council and a Legislative Assembly, constitute the legislature of Western Australia.

Executive government is based, as in the case of the Commonwealth and in other States, on the system which evolved in Great Britain in the eighteenth century and which is generally known as the " Cabinet " system. The Cabinet consists of Ministers of the Crown chosen for the Ministry from members of Parliament belonging to the political party, or coalition of parties, which is in the majority in the Legislative Assembly. The Constitution requires that at least one of the Ministers be selected from members of the Legislative Council. In Western Australia, as in the other Australian States, the office of principal Minister is designated " Premier."

The right to vote at parliamentary elections was extended to women by the Constitution Acts Amendment Act of 1899 and membership of either House was provided for by the Parliament (Qualification of Women) Act, 1920. The first woman member of any Australian Parliament was Mrs. Edith Dircksey Cowan, O.B.E., who was elected to the Legislative Assembly in March, 1921 as member for West Perth. Mrs. A. F. G. (later Dame Florence) Cardell-Oliver, M.L.A. for Subiaco, became the first woman Cabinet Minister in Australia when she joined the McLarty Ministry in 1947.

Payment of members was introduced in 1900 by a Payment of Members Act and a superannuation fund is established under the Parliamentary Superannuation Act of 1948, which came into operation on the 1st January, 1949.

Since 1890, when responsible government was granted to Western Australia, there have been 23 separate Ministries as shown in the following table. No organized political party existed in the Colony until the formation of a Labour party in the 1890's. A Labour Ministry assumed office in 1904. As no previous Ministry had a specific party designation, the table has been annotated accordingly.

MINISTRIES FROM 1890

Name of Premier	Political Party	Date of Assumption of Office	Duration		
			Years	Months	Days
Forrest	(a)	1890—29th December	10	1	17
Throssell		1901—15th February	—	3	12
Leake		—27th May	—	5	25
Morgans		—21st November	—	1	2
Leake		—23rd December	—	6	8
James		1902—1st July	2	1	9
Daglish	Labour	1904—10th August	1	—	15
Rason	Liberal	1905—25th August	—	8	12
Moore	"	1906—7th May	4	4	9
Wilson	"	1910—16th September	1	—	21
Scaddan	Labour	1911—7th October	4	9	20
Wilson	Liberal	1916—27th July	—	11	1
Lefroy	"	1917—28th June	1	9	20
Colebatch	"	1919—17th April	—	1	—
Mitchell	Nat. and C.P. (coalition)	—17th May	4	10	30
Collier	Labour	1924—16th April	6	—	8
Mitchell	Nat. and C.P. (coalition)	1930—24th April	3	—	—
Collier	Labour	1933—24th April	3	3	27
Willcock	"	1936—20th August	8	11	11
Wise	"	1945—31st July	1	8	1
McLarty	L.C.L. and C.P. (coalition)	1947—1st April	5	10	22
Hawke	Labour	1953—23rd February	6	1	10
Brand	L.C.L. and C.P. (coalition)	1959—2nd April	In office at 31st December, 1963		

C.P. = Country Party. L.C.L. = Liberal and Country League. Nat. = Nationalist.
(a) No specific party designation.

By a proclamation made in accordance with the provisions of the Electoral Districts Act, 1947–1955, and published in the *Government Gazette* of the 16th June, 1961, Electoral Commissioners were appointed to adjust the boundaries of the Electoral Districts, for representation in the Legislative Assembly, and the Electoral Provinces, for representation in the Legislative Council. The report of the Commissioners was published in the *Government Gazette* of the 14th December, 1961.

The Commissioners found that, in accordance with the statutory provisions for determining the number of Districts in areas other than the North-West Area as defined by the Act, it was necessary to increase from 21 to 22 the number of Districts in the Metropolitan Area and to reduce from 26 to 25 the number in the Agricultural, Mining and Pastoral Area. The Act fixes the number of Districts in the North-West Area at three, and no alteration was made to the existing boundaries of the component Districts. In dealing with the Provinces, adjustments were made in compliance with the provisions of the Act requiring that each Province should contain complete and contiguous Districts.

Elections for the Legislative Assembly, on the basis of the Electoral Districts as redefined, were held on the 31st March, 1962. The Liberal-Country Party Government, led by the Honourable David Brand, was returned to office and political party representation remained unaltered. The composition of the Legislative Assembly as a result of the election is shown on page 101. The members of the Ministry took the oath of office on the 12th April, 1962. The names of the Ministers and the portfolios held by them are shown in the following list.

THE MINISTRY FROM 12th APRIL, 1962

Name of Minister	Title of Office
Hon. David Brand, M.L.A.	Premier, Treasurer and Minister for Tourists
Hon. Crawford David Nalder, M.L.A.	Deputy Premier and Minister for Agriculture and Electricity
Hon. Charles Walter Michael Court, O.B.E., M.L.A.	Minister for Industrial Development, Railways and the North-West
Hon. Edgar Henry Mead Lewis, M.L.A.....	Minister for Education and Native Welfare
Hon. Gerald Percy Wild, M.B.E., M.L.A.	Minister for Works, Water Supplies and Labour
Hon. Arthur Frederick Griffith, M.L.C.	Minister for Mines, Housing and Justice, and Leader of the Government in the Legislative Council
Hon. William Stewart Bovell, M.L.A.	Minister for Lands, Forests and Immigration
Hon. Ross Hutchinson, D.F.C., M.L.A.	Chief Secretary and Minister for Health and Fisheries
Hon. Leslie Arthur Logan, M.L.C.	Minister for Local Government, Town Planning and Child Welfare
Hon. James Frederick Craig, M.L.A.	Minister for Transport and Police

The Legislative Council[1]

The Legislative Council consists of 30 members, each of the ten Electoral Provinces into which the State is divided being represented by three members. Election is for a term of six years and one-third of the members retire every two years.

The qualifications for a candidate for election to the Legislative Council are that he or she shall be at least 30 years of age and free from legal incapacity, shall have resided in Western Australia for a minimum of two years, be a natural-born or naturalized British subject, and be enrolled, or qualified for enrolment, as an elector at Legislative Assembly elections. A member of the Legislative Assembly, a Judge of the Supreme Court, the Sheriff of Western Australia, a minister of religion, an undischarged bankrupt or a debtor against whose estate there is a subsisting order in bankruptcy may not be elected to the Legislative Council.

To qualify as an elector a person must be at least 21 years of age and not subject to any legal incapacity, be a natural-born or naturalized British subject resident in Western Australia for six months, and possess certain property qualifications relating to freehold, leasehold or householder occupancy. Aboriginal natives of Australia who satisfy these requirements are entitled to enrolment as electors.

Preferential voting applies to Council elections and voting is not compulsory.

The following table shows the membership of the Legislative Council at the 31st December, 1963.

(1) See *Appendix*.

MEMBERS OF THE LEGISLATIVE COUNCIL AT 31st DECEMBER, 1963

Name	Political Party	Electoral Province
DUE TO RETIRE IN 1964		
Abbey, Hon. C. R.	L.C.L.	Central
Bennetts, Hon. G.	A.L.P.	South-East
Griffith, Hon. A. F.	L.C.L.	Suburban
Hall, Hon. W. R.	A.L.P.	North-East
Hislop, Hon. J. G., M.B., Ch.B., F.R.C.P., F.R.A.C.P.	L.C.L.	Metropolitan
Lavery, Hon. F. R. H.	A.L.P.	West
Loton, Hon. A. L.	C.P.	South
Murray, Hon. J.	L.C.L.	South-West
Simpson, Hon. C. H.	C.P.	Midland
Wise, Hon. F. J. S.	A.L.P.	North
DUE TO RETIRE IN 1966		
Baxter, Hon. N. E.	C.P.	Central
Garrigan, Hon. J. J.	A.L.P.	South-East
Hutchison, Hon. Ruby F.	A.L.P.	Suburban
Logan, Hon. L. A.	C.P.	Midland
Mattiske, Hon. R. C.	L.C.L.	Metropolitan
Teahan, Hon. J. D.	A.L.P.	North-East
Thompson, Hon. R.	A.L.P.	West
Thompson, Hon. S. T. J.	C.P.	South
Willesee, Hon. W. F.	A.L.P.	North
Willmott, Hon. F. D.	L.C.L.	South-West
DUE TO RETIRE IN 1968		
Davies, Hon. E. M.	A.L.P.	West
Diver, Hon. L. C.	C.P.	Central
Heenan, Hon. E. M.	A.L.P.	North-East
Jones, Hon. A. R.	C.P.	Midland
MacKinnon, Hon. G. C.	L.C.L.	South-West
Robinson, Hon. H. R.	L.C.L.	Suburban
Strickland, Hon. H. C.	A.L.P.	North
Stubbs, Hon. R. H. C.	A.L.P.	South-East
Thomson, Hon. J. M.	C.P.	South
Watson, Hon. H. K.	L.C.L.	Metropolitan

SUMMARY

Australian Labor Party (A.L.P.)	13
Country Party (C.P.)	8
Liberal and Country League (L.C.L.)	9

The Legislative Assembly

There are 50 members of the Legislative Assembly, each member representing one of the 50 Electoral Districts into which the State is divided for the purpose. Members are elected for the duration of the Parliament, normally three years.

A candidate for election must have resided in Western Australia for twelve months, be at least 21 years of age and free from legal incapacity, be a natural-born or naturalized British subject, and be enrolled, or qualified for enrolment, as an elector at Legislative Assembly elections. A candidate must not be a member of the Legislative Council, a Judge of the Supreme Court, the Sheriff of Western Australia, a minister of religion, an undischarged bankrupt or a debtor against whose estate there is a subsisting order in bankruptcy.

For enrolment as an elector, a person must be at least 21 years of age, a natural-born or naturalized British subject free from legal incapacity, must have resided in Western Australia for six months continuously and in the Electoral District for which he claims enrolment for a continuous period of three months immediately preceding the date of his claim. Enrolment is compulsory for qualified persons except aboriginal natives of Australia, who may, but in general are not required to, enrol.

Voting at elections for the Legislative Assembly is on the preferential system and is compulsory for all enrolled persons including Australian aboriginals.

The following table shows the membership of the Legislative Assembly as a result of the general elections held on the 31st March, 1962.

MEMBERS OF THE LEGISLATIVE ASSEMBLY
AFTER GENERAL ELECTIONS OF 31st MARCH, 1962

Name	Political Party	Electoral District
Bickerton, Arthur William (*a*)	A.L.P.	Pilbara
Bovell, Hon. William Stewart (*a*)	L.C.L.	Vasse
Brady, John Joseph	A.L.P.	Swan
Brand, Hon. David	L.C.L.	Greenough
Burt, Richard Paull Septimus	L.C.L.	Murchison
Cornell, George Meredith (*a*)	C.P.	Mount Marshall
Court, Hon. Charles Walter Michael, O.B.E.	L.C.L.	Nedlands
Craig, Hon. James Frederick	C.P.	Toodyay
Crommelin, Harold William	L.C.L.	Claremont
Curran, Henry	A.L.P.	Cockburn
Davies, Ronald	A.L.P.	Victoria Park
Dunn, Kenneth Wathen (*b*)	L.C.L.	Darling Range
Evans, Thomas Daniel	A.L.P.	Kalgoorlie
Fletcher, Harry Arthur	A.L.P.	Fremantle
Gayfer, Harry Walter (*b*)	C.P.	Avon
Graham, Hon. Herbert Ernst	A.L.P.	Balcatta
Grayden, William Leonard	L.C.L.	South Perth
Guthrie, Hugh Norman	L.C.L.	Subiaco
Hall, Jack	A.L.P.	Albany
Hart, Thomas George (*b*)	C.P.	Roe
Hawke, Hon. Albert Redvers George (*a*)	A.L.P.	Northam
Heal, Stanley	A.L.P.	Perth
Hearman, Hon. John Merrifield	L.C.L.	Blackwood
Hegney, James	A.L.P.	Belmont
Hegney, Hon. William, A.A.S.A.	A.L.P.	Mount Hawthorn
Henn, Guy Gavin, M.R.C.S., L.R.C.P. (*a*)	L.C.L.	Wembley
Hutchinson, Hon. Ross, D.F.C.	L.C.L.	Cottesloe
Jamieson, Colin John	A.L.P.	Beeloo
Kelly, Hon. Lionel Francis	A.L.P.	Merredin-Yilgarn
Lewis, Hon. Edgar Henry Mead (*a*)	C.P.	Moore
McLarty, Hon. Sir Duncan Ross, K.B.E., M.M. (*c*)	L.C.L.	Murray
Manning, Iven Wemyss (*a*)	L.C.L.	Wellington
Manning, William Allan, A.A.S.A., A.C.I.S. (*a*)	C.P.	Narrogin
May, Donald George (*b*)	A.L.P.	Canning
May, Harry	A.L.P.	Collie
Mitchell, Clayton Clealand Bickley (*b*)	C.P.	Stirling
Moir, Arthur McAlister	A.L.P.	Boulder-Eyre
Nalder, Hon. Crawford David (*a*)	C.P.	Katanning
Nimmo, Leslie Charles	L.C.L.	Karrinyup
Norton, Daniel (*a*)	A.L.P.	Gascoyne
O'Connor, Raymond James	L.C.L.	Mount Lawley
Oldfield, Edward Peate	A.L.P.	Maylands
O'Neil, Desmond Henry	L.C.L.	East Melville
Rhatigan, John Joseph	A.L.P.	Kimberley
Roberts, George Frederick (*c*)	L.C.L.	Bunbury
Rowberry, Joseph Neon	A.L.P.	Warren
Sewell, William Hawkins	A.L.P.	Geraldton
Toms, John Mervin (*a*)	A.L.P.	Bayswater
Tonkin, Hon. John Trezise	A.L.P.	Melville
Wild, Hon. Gerald Percy, M.B.E.	L.C.L.	Dale

SUMMARY

Australian Labor Party (A.L.P.)	24
Country Party (C.P.)	8
Liberal and Country League (L.C.L.)	18

(*a*) Returned unopposed. (*b*) New member. (*c*) See letterpress immediately following table.

It was announced by the Premier on the 18th May, 1962 that Sir Ross McLarty had resigned as Member of the Legislative Assembly for Murray. A by-election was held on the 23rd June, 1962 and Mr. Ewart Runciman (Liberal and Country League) was elected to fill the vacancy.

Mr. G. F. Roberts, Member of the Legislative Assembly for Bunbury, died on the 22nd July, 1962. Mr. Maurice Clifford Williams (Liberal and Country League) was elected to succeed him at a by-election held on the 1st September, 1962.

Neither of these by-elections affected the strengths of the political parties in the Legislative Assembly.

ELECTIONS, ELECTORS ON ROLL AND VOTES RECORDED

The Federal Parliament

Elections for the Senate and the House of Representatives were held on the 9th December, 1961 (1). The Liberal-Country Party Government, led by the Right Honourable R. G. Menzies, C.H., Q.C., M.P., was returned to office with a majority in the House of Representatives reduced from 32 to two seats. Government representation in the Senate from the 1st July, 1962 was reduced from 32 to 30.

In Western Australia each of the nine Electoral Divisions was contested in the election for membership of the House of Representatives. The following table shows the number of electors enrolled for each Division, the number who voted and the number of informal ballot papers returned.

FEDERAL PARLIAMENT—ELECTORS ON ROLL AND VOTES RECORDED
GENERAL ELECTIONS OF 9th DECEMBER, 1961

Electoral Division	Number of Electors Enrolled			Number of Electors who Voted			Percentage of Enrolled Electors who Voted			Number of Informal Ballot Papers at Election for—	
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons	Senate	House Representatives
Canning	20,896	18,882	39,778	19,906	18,083	37,989	95·26	95·77	95·50	4,015	1,525
Curtin	19,512	22,982	42,494	18,595	21,651	40,246	95·30	94·21	94·71	3,117	969
Forrest	21,685	19,880	41,565	20,730	19,155	39,885	95·60	96·35	95·96	3,729	1,148
Fremantle	23,838	25,086	48,924	22,645	24,092	46,737	95·00	96·04	95·53	4,308	1,268
Kalgoorlie	18,661	14,840	33,501	17,135	13,433	30,568	91·82	90·52	91·25	3,686	859
Moore	20,371	18,419	38,790	19,204	17,441	36,645	94·27	94·69	94·47	3,125	1,237
Perth	15,317	17,713	33,030	14,122	16,490	30,612	92·20	93·10	92·68	3,920	1,436
Stirling	27,677	28,956	56,633	26,357	27,951	54,308	95·23	96·53	95·89	6,151	1,875
Swan	23,908	26,294	50,202	22,795	24,822	47,617	95·34	94·40	94·85	4,386	1,403
Total—Western Australia	191,865	193,052	384,917	181,489	183,118	364,607	94·59	94·85	94·72	36,437	11,720

The State Parliament

The biennial elections for membership of the Legislative Council were held on the 12th May, 1962. Five of the ten retiring members were returned unopposed and three were re-elected. The results of elections in the two remaining Provinces were such that political party representation was unaltered, and the Liberal-Country Party coalition therefore retained its majority of four seats in the Legislative Council.

General elections for membership of the Legislative Assembly took place on the 31st March, 1962. This election was the first to be made on the basis of the Electoral Districts as redefined by the Electoral Commissioners appointed in 1961 (*see* letterpress on page 98). The Liberal-Country Party Government, led by the Honourable David Brand, was returned to office and political party representation remained unaltered.

The tables on the next page show the number of electors enrolled in each Province at the 16th March, 1962 and in each District at the 7th February, 1962. The numbers of effective and informal votes recorded throughout the State at the elections are also shown.

It will be seen from the second table that the number of electors enrolled in each District in the Metropolitan Area was approximately twice the number in each District in the Agricultural, Mining and Pastoral Area. This is accounted for by a requirement of the Electoral Districts Act, 1947-1955 that the Electoral Commissioners, in determining the quota of electors for each District, shall reckon every two electors in the Metropolitan Area as one elector, at the same time giving full representation to each elector in the Agricultural, Mining and Pastoral Area. The number of Districts in the North-West Area is fixed by the Act at three.

(1) See *Appendix*.

LEGISLATIVE COUNCIL—BIENNIAL ELECTIONS OF 12th MAY, 1962

Electoral Province	Electors on Roll			Electoral Province	Electors on Roll		
	Males	Females	Persons		Males	Females	Persons
Central (*a*)	10,075	3,054	13,129	South (*a*)	8,644	1,908	10,552
Metropolitan	26,812	13,700	40,512	South-East	4,115	1,273	5,388
Midland (*a*)	4,517	850	5,367	South-West	11,888	2,905	14,793
North (*a*)	1,759	361	2,120	Suburban	28,231	15,718	43,949
North-East	4,258	1,548	5,806	West (*a*)	17,559	8,037	25,596
Electors on Roll in Contested Provinces					75,304	35,144	110,448
Electors on Roll in Uncontested Provinces					42,554	14,210	56,764
Total Number of Electors on Roll					117,858	49,354	167,212
Votes Recorded—							
Effective					(*b*)	(*b*)	45,821
Informal					(*b*)	(*b*)	193
Total Number of Votes Recorded					31,707	14,307	46,014
Percentage of Votes Recorded to Electors on Roll in Contested Provinces					42·11	40·71	41·66
Percentage of Informal Votes to Total Votes Recorded					(*b*)	(*b*)	0·42

(*a*) Uncontested Province. (*b*) Not available.

LEGISLATIVE ASSEMBLY—GENERAL ELECTIONS OF 31st MARCH, 1962

Electoral District	Electors on Roll			Electoral District	Electors on Roll		
	Males	Females	Persons		Males	Females	Persons
METROPOLITAN AREA (*a*)							
Balcatta	5,118	5,269	10,387	Maylands	5,135	5,844	10,979
Bayswater (*b*)	5,394	5,577	10,971	Melville	5,268	5,471	10,739
Beeloo	5,385	5,652	11,037	Mount Hawthorn	5,131	6,261	11,392
Belmont	5,148	5,330	10,478	Mount Lawley	5,023	6,000	11,023
Canning	4,752	4,801	9,553	Nedlands	5,180	6,013	11,193
Claremont	4,716	5,570	10,286	Perth	5,518	6,195	11,713
Cockburn	5,097	4,940	10,037	South Perth	5,176	6,242	11,418
Cottesloe	5,071	5,832	10,903	Subiaco	4,919	6,588	11,507
East Melville	5,277	5,642	10,919	Swan	5,561	5,667	11,228
Fremantle	5,828	5,801	11,629	Victoria Park	5,177	5,623	10,800
Karrinyup	5,226	5,775	11,001	Wembley (*b*)	5,139	5,618	10,757
AGRICULTURAL, MINING AND PASTORAL AREA (*a*)							
Albany	3,098	3,115	6,213	Moore (*b*)	2,912	2,391	5,303
Avon	2,572	2,302	4,874	Mount Marshall (*b*)	2,710	2,310	5,020
Blackwood	2,747	2,414	5,161	Murchison	3,068	2,497	5,565
Boulder-Eyre	3,041	2,596	5,637	Murray	2,710	2,565	5,275
Bunbury	2,873	2,968	5,841	Narrogin (*b*)	2,779	2,532	5,311
Collie	2,760	2,537	5,297	Northam (*b*)	2,937	2,728	5,665
Dale	2,875	2,815	5,690	Roe	3,171	2,527	5,698
Darling Range	3,054	3,218	6,272	Stirling	2,751	2,462	5,213
Geraldton	2,989	2,702	5,691	Toodyay	2,947	2,547	5,494
Greenough	2,783	2,266	5,049	Vasse (*b*)	2,643	2,549	5,192
Kalgoorlie	3,242	2,749	5,991	Warren	3,018	2,417	5,435
Katanning (*b*)	2,700	2,501	5,201	Wellington (*b*)	2,949	2,635	5,584
Merredin-Yilgarn	2,852	2,301	5,153				
NORTH-WEST AREA (*a*)							
Gascoyne (*b*)	1,001	718	1,719	Pilbara (*b*)	963	525	1,488
Kimberley	1,133	690	1,823				
WHOLE STATE							
Electors on Roll in Contested Districts					157,390	162,204	319,594
Electors on Roll in Uncontested Districts					32,127	30,084	62,211
Total Number of Electors on Roll					189,517	192,288	381,805
Votes Recorded—							
Effective					(*c*)	(*c*)	292,196
Informal					(*c*)	(*c*)	5,324
Total Number of Votes Recorded					146,788	150,732	297,520
Percentage of Votes Recorded to Electors on Roll in Contested Districts					93·26	92·93	93·09
Percentage of Informal Votes to Total Votes Recorded					(*c*)	(*c*)	1·79

(*a*) As defined in the Electoral Districts Act, 1947-1955. (*b*) Uncontested District. (*c*) Not available.

LEGISLATION DURING 1961 AND 1962

The Federal Parliament

A selection from the legislative enactments of the Commonwealth Parliament in 1961 is given in summarized form on pages 82–86 of the *Official Year Book of the Commonwealth of Australia, No.* 48—1962. The legislation of 1962 is treated similarly on pages 82–86 of the succeeding issue, No. 49—1963.

The State Parliament

During the third session of the twenty-third Parliament, which lasted from the 3rd August to the 15th November, 1961, the Western Australian legislature enacted 82 Statutes and, in addition, dealt with 9 Bills which were introduced but not passed. In the first session of the twenty-fourth Parliament, between the 26th July and the 15th November, 1962, the Parliament passed 90 Acts and discarded 13 Bills.

The full text of the legislation enacted is contained in the volumes of *The Acts of the Parliament of Western Australia*, to which reference should be made if complete details are required. To provide a brief review of some of the more important Statutes of 1961 and 1962, a short summary of the main provisions is given in this section. Supply, Appropriation and Loan Acts are excluded from this summary, as well as continuance measures except as they relate to the renewal of certain important agreements between the Commonwealth and the State.

Acts Passed during 1961

Administration Act Amendment Act—Provides that distribution of the property of an intestate estate shall be made on the basis of value at date of death instead of, as formerly, value at date of distribution. Requires further that all income derived from such property shall be distributed among the persons entitled in the same proportions as the property itself, instead of reserving to a surviving spouse five per cent. of such income before distribution of the remainder.

Alumina Refinery Agreement Act—Ratifies an agreement between the State Government and Western Aluminium No Liability for the establishment by the Company before the 31st March, 1967 (or such later date as may be appropriate) of a refinery at Kwinana estimated to cost £5 million and having a minimum annual production capacity of 120,000 tons of alumina. Authorizes the sale to the Company by the State of a site comprising 137 acres ; the diversion of the Coogee-Kwinana Railway on an agreed basis of costs ; and the construction by the Company of a wharf and associated facilities subject to specified conditions relating to design, maintenance and rights of access. Imposes conditions for disposal of effluent and dredging of channels. Prescribes harbour fees. Grants mineral leases for the mining of bauxite and specifies royalties payable. Permits the Company to export bauxite up to a total amount of 2,560,000 tons, with a maximum in any one financial year of 500,000 tons, over a period of seven years from the date of execution of the agreement. Provides that, after the expiration of that period, the State may permit the export of bauxite in quantities to be decided after consideration of ore reserves then known to be in the leased area. Requires the Government to construct a railway from the mineral leases to the refinery and fixes a schedule of freight charges. Ensures the supply of water and electricity necessary to meet the Company's requirements and establishes the rights and obligations of each party in respect of other matters.

Banana Industry Compensation Trust Fund Act—Establishes a trust fund financed by contributions from growers and appropriations by Parliament to compensate growers for losses from cyclones, floods or any natural cause, pest or disease constituting a threat to the existence of the banana-growing industry. To provide for the administration of the fund establishes The Banana Industry Compensation Committee of three members, comprising an officer of the Department of Agriculture as chairman, an officer of the State Treasury and a grower elected by the growers as their representative. Prescribes that a grower's contribution shall be at the rate of 2s. per case and that the amount to be appropriated by Parliament shall be one-half of the total sum contributed by the growers.

Bank Holidays Act Amendment Act—Authorizes the closure on Saturdays of banks other than savings bank agencies and extends trading hours to 5 p.m. on Fridays.

Builders' Registration Act Amendment Act—Provides for the registration of only one class of builder by providing that no person may register, or continue to be registered, as a " B " class builder. Provides that a former registered " B " class builder shall become a " journeyman builder " at the coming

into operation of the Act and prescribes conditions under which he may apply to be registered as a builder. Specifies conditions under which an unregistered builder or supervisor of building work may apply for registration.

Building Societies Act Amendment Act—Creates an office of Registrar of Building Societies separate from that of Registrar of Friendly Societies. Establishes a Building Societies Advisory Committee of five members, comprising the Registrar as chairman, the President of the State Branch of the Commonwealth Institute of Valuers, an officer of the State Public Service, and two persons experienced in building society management. Revises and supplements requirements of registration and supervision of societies.

City of Fremantle and Town of East Fremantle Trust Funds Act—Dissolves the Fremantle Municipal Transport Board and repeals the Fremantle Municipal Tramways and Electric Lighting Act, 1903–1952 and the Fremantle Municipal Transport Board (Postponement of 1960 Elections) Act, 1960. Ratifies an agreement between the Fremantle Municipal Transport Board, the City of Fremantle and the Town of East Fremantle for the setting up of two trust funds to control the assets acquired by the Board during its management of the transport undertakings on behalf of the two municipalities. Assigns such assets to the appropriate funds in the proportion of six-sevenths to the City of Fremantle Trust Fund and one-seventh to the Town of East Fremantle Trust Fund. Prescribes the method of appointing trustees to administer the funds and defines the powers, duties and responsibilities of the trustees.

Commonwealth and State Housing Agreement Act—Ratifies amendments to the 1956 Agreement and extends to the 30th June, 1966 the period of operation of the Agreement as amended. Continues the provision that not less than 30 per cent. of the total advances made to the State shall be allocated for the provision of finance for home builders by means of loans by the State to building societies and other approved institutions. Varies the provision under which the State is required to set aside up to five per cent. of the amount of advances for the erection of dwellings for serving members of the Forces so that the five per cent. may be exceeded on agreement between the Commonwealth and the State. Amends the 1945 Agreement by removing the conditions imposed on the State in the sale of dwellings built under that Agreement, and allowing the State to sell such dwellings on its own terms and conditions.

Companies Act—Consolidates and amends the law relating to companies. Repeals the Companies Act of 1943 and later amending Acts, except as they relate to co-operative companies.

Criminal Code Amendment Act—Abolishes the death penalty for the crime of murder but retains it for the crime of wilful murder. Provides that a person sentenced to life imprisonment for murder or wilful murder shall not be released before having served a period of 15 years' imprisonment, except in cases of miscarriage of justice or the serious ill-health of the prisoner. Empowers the Supreme Court to suspend a driver's licence or to declare a person disqualified for obtaining such a licence, for any period thought fit, in cases where the person is convicted of manslaughter arising out of the use of a vehicle or of causing death by not exercising reasonable care in the use of a vehicle.

Death Duties (Taxing) Act Amendment Act—Reduces the amount of probate duty payable on estates passing to the widow or widower, parents, brothers, sisters and children of the testator if they are domiciled in Western Australia and resident in the State at the date of death of the deceased.

Dividing Fences Act—Repeals the Cattle Trespass, Fencing, and Impounding Act, 1882–1957 and the Ordinance 4 William IV No. 4 (an Act to regulate the Fencing of Town and Suburban Allotments). Enacts new provisions for the sharing of expenses and the settlement of disputes in respect of the erection and repair of dividing fences and the location of boundaries.

Entertainments Tax and Assessment Acts Repeal Act—Abolishes entertainments tax by repealing the Entertainments Tax Assessment Act, 1925–1959 and the Entertainments Tax Act, 1925–1959.

Explosives and Dangerous Goods Act—Consolidates and amends the law relating to explosives and regulates the import, manufacture, storage, sale, use and carriage of explosives (including fireworks) and the storage of dangerous goods. Repeals the Explosive Substances Act, 1894 and the Explosives Act, 1895–1902.

Fisheries Act Amendment Act—Redefines the term " crayfish tail." For determining the minimum size of crayfish tails which may lawfully be taken, substitutes measurement solely by weight in place of the combined measurement by length and weight previously prescribed. Revises the requirements relating to the submission of statistical returns by fishermen. Amends the provisions concerning the seizure of fish and the labelling of consignments. Specifies that seized fish shall be forfeited for the use of the Crown. Extends the power of search to include aircraft and enables the seizure of explosives used, or intended to be used, for the taking of fish.

Housing Loan Guarantee Act Amendment Act—Inserts a definition of " approved lending authority ", being an " institution, body or person approved under this Act by the Minister for the purpose of making loans to an approved institution to be used by the approved institution for the purposes of this Act." Amends the definition of " approved institution " to limit it to those which are approved " for the purpose of lending money to borrowers to enable them to build or purchase new houses for themselves and their dependants." Empowers the Treasurer, subject to certain conditions, to give guarantees to approved lending authorities and indemnities to approved institutions ; to declare maximum amounts of guarantees and indemnities ; to determine the maximum rate of interest which an approved institution may charge ; and to impose certain limits in regard to advances. Requires each authority and institution to submit an annual return to the Minister and to permit inspection of documents.

Industry (Advances) Act Amendment Act—Extends the meaning of the word " industry " to include the business of operating the Midland Railway carried on by The Midland Railway Company of Western Australia Limited.

Iron Ore (Scott River) Agreement Act—Ratifies an agreement between the State Government and Mineral Mining and Exports (W.A.) Pty. Ltd., with Heine Brothers (Australasia) Pty. Limited as guarantor, for the establishment of a processed iron-ore industry in the Scott River-Flinders Bay area. Requires the Government to make available freehold land for a works site, to provide up to 160 houses in or near the townsite of Augusta, to construct roads and to provide electric power. Requires the Company, at its own expense, to undertake harbour development and build a factory of specified capacity and, as a condition of the grant of mineral claims, to pay royalties at specified rates on ore mined. Allows the Company a proving period in which to evaluate the resources of the area, to select a location for the wharf site, to decide upon the method to be used in processing the ore, and to arrange for all the necessary finance. Specifies that during the currency of the agreement the Company may not export from Australia without the written consent of the Government any iron ore from the leased areas, except processed iron ore.

Iron Ore (Tallering Peak) Agreement Act—Ratifies an agreement between the State Government and Western Mining Corporation Limited for the mining and export of iron ore, pyrites and concentrates from the Tallering Peak area. Requires the Company to evaluate the deposits within a period of six months and, if the mining of the ore is agreed by the parties to be economically sound, grants a further three months to arrange marketing contracts. In the event of the Company's proceeding with development, the agreement requires the Company to construct, on a stockpile area at Geraldton harbour provided on a five-year lease by the Government, an approved fixed conveyor system capable of loading 500 tons of ore per hour on to ships ; to construct and maintain, also on a five-year lease, a railway from the mineral lease in the Tallering Peak area to the railhead at Mullewa ; to provide two diesel locomotives and rolling stock capable of transporting 10,000 tons of ore weekly to Geraldton ; and to pay freight charges as specified. Prescribes that the railway, rolling stock and conveyor system shall become the property of the Government upon the expiration of the five-year lease. Requires the Government to grant to the Company mineral leases for the mining of iron ore and iron pyrites in the Tallering Peak area. Fixes royalties on ore recovered and wharfage charges on exports. Commits the Government to provide crews to operate the ore trains, to maintain the locomotives and rolling stock, to recondition and maintain the Mullewa-Geraldton railway, and to share equally with the Company expenses incurred in acquiring land for the railway and in renewing and altering roads, bridges, sewers, etc. After the expiration of the five-year lease, requires the Government to operate and maintain the railway from the mineral lease to Mullewa and to ensure availability of wharf and loading facilities at Geraldton for a period of ten years, or until the Company ceases to transport approximately 500,000 tons of ore yearly from its mineral leases, whichever is the shorter period. Provides for determination of freight rates and specifies charges for the use of loading facilities.

Katanning Electricity Supply Undertaking Acquisition Act—Ratifies an agreement between the State Electricity Commission and Katanning Flour Mills Limited for the acquisition by the Commission of the Company's electricity undertaking at Katanning. Provides that, on the day of the transfer, the Katanning Electric Lighting and Power (Private) Act, 1904 and the Katanning Electric Lighting and Power Repeal Act, 1959 shall be repealed.

Kwinana-Mundijong-Jarrahdale Railway Act—In terms of the agreement ratified by the Alumina Refinery Agreement Act, 1961 authorizes the construction of a railway from Kwinana to Jarrahdale through Mundijong, for the transport of ore from the bauxite deposits to the alumina refinery.

Laporte Industrial Factory Agreement Act—Ratifies an agreement between the State Government and Laporte Industries Limited for the establishment before the 31st December, 1964 of a chemical factory near Bunbury. Requires that local materials and equipment shall be used as far as possible. Specifies that the factory, estimated to cost not less than £3 million, shall be capable of producing not less than 10,000 tons of titanium oxide pigments per year together with the necessary supplies of sulphuric acid and, as soon as economic conditions justify, shall be expanded to manufacture other chemicals and mineral acids. Requires the State to acquire land, provide certain roads and facilitate the granting of road-haulage licences, ensure the availability of raw materials, water, electricity and housing, construct and maintain a pipeline to discharge effluent from the factory to the ocean and, if requested by the Company, grant financial assistance or, by guarantee or otherwise, assist the Company to raise the finance required for the establishment of the project up to a maximum of £1·3 million. Requires the Company to pay 110/150ths of the cost incurred by the Government for the purchase of the land and, on demand, to reimburse the Government for ⅗ths of the total cost of providing and laying the pipeline.

Licensing Act Amendment Act—Extends the prescribed hours for the sale of liquor with meals in licensed restaurants to include the period from 12 noon to 2 p.m. and from midnight to 12.30 a.m. of the following day, irrespective of whether such following day is Anzac Day, Good Friday, Christmas Day or a Sunday. Alters liquor trading hours of railway refreshment rooms to conform to those of hotels. Permits females to be employed in the sale of liquor on licensed premises on Sundays. Changes the licensing year for premises located north of 26° S. latitude to the year ending 30th June.

Local Government Act Amendment Act—Defines the term " building line " and revises and extends provisions relating to building lines and associated matters. Empowers local government authorities to make by-laws prohibiting the placing of lockable cabinets, such as discarded refrigerators, on rubbish depots, vacant land or other accessible places unless the doors, locks and hinges are first removed or every door or lid is otherwise made incapable of being fastened. Increases the statutory limit on the general rate from 1s. to 1s. 3d. in the £ on the unimproved capital value of the land, where the local government authority does not provide a reticulated water supply but permits the Minister to raise the limit to 1s. 6d. in the £ in such areas as he may approve.

Medical Act Amendment Act—Permits the registration as medical practitioners of qualified persons engaged in research, teaching or post-graduate study at recognized teaching or research institutions. Allows medical officers who are employed solely by the Commonwealth Government and are registered as medical practitioners in another State or Territory of the Commonwealth to register in Western Australia without payment of certain fees.

Metropolitan Region Improvement Tax Act Amendment Act—Reduces the rate of tax to be imposed after the assessment year ended 30th June, 1962 to ¾d. in the £ on the unimproved value of all land chargeable with the tax as assessed under the Metropolitan Region Town Planning Scheme Act, 1959 and the Land Tax Assessment Act, 1907.

Mine Workers' Relief Act Amendment Act—Substitutes for the former appeal board a Medical Board, to be established as required, comprising three members whose function is to hear appeals against diagnoses and also to determine whether tuberculosis found in a person during the second year of his ceasing to be engaged in the mining industry resulted from his employment in the industry. Extends up to three years from the date of leaving the industry the period during which the diagnosis of specified diseases may entitle a worker to benefits under the Act.

Painters' Registration Act—Provides that no person after six months from the date of commencement of the Act may, except as an employee, carry out painting where the charge exceeds £50 unless he is a registered painter. Establishes a Painters' Registration Board of three members. Requires that the chairman shall be the Chairman of the Builders' Registration Board and that the other two members shall be respectively a member of the Master Painters, Decorators and Signwriters' Association and a person nominated by The West Australian Chamber of Manufactures to represent the Australian Paint Manufacturers Federation. Requires the Board to keep a Register of Painters ; to prescribe training courses and conduct examinations for persons desiring to register as painters ; and to investigate complaints concerning faulty or inferior painting. Empowers the Board to cancel or suspend registration. Provides for appeals against decisions of the Board. Prescribes the fees to be paid by registered painters. Restricts the application of the Act to the metropolitan area as defined by the Metropolitan Water Supply, Sewerage and Drainage Act, 1909–1960.

Police Act Amendment Act—Enables the Governor on the recommendation of the Commissioner of Police to prohibit by proclamation the use or possession of slot machines but exempts certain machines including weighing and vending machines, parking meters and those machines giving access to places or enabling the playing of a game of skill. Stipulates that exempted machines must give no consideration, advantage or reward except the item paid for. Permits the seizure by the police of unauthorized machines. Prescribes penalties for the conviction of using or being in possession of a prohibited machine.

Public Moneys Investment Act—Authorizes the Treasurer to invest public moneys for short terms in securities of, or guaranteed by, the Government of the Commonwealth or of the State, including investments made with approved dealers in the short-term money market, and permits investment for longer terms with the approval of the Governor.

Railway Standardisation Agreement Act—Ratifies an agreement between the Commonwealth and the State Government providing for Commonwealth financial assistance for the construction, before the 31st December, 1968, of a standard gauge railway and associated narrow gauge railway works on specified routes, and the provision of rolling stock sufficient to transport two million tons of iron ore per annum from Koolyanobbing to Kwinana, in addition to carrying general traffic. Requires the Commonwealth Government to advance progressively 17/20ths of the total cost as detailed in the agreement and estimated at £41,210,000 on the 1960 basis of costs, the amount being specified only as an indication of the extent of the work. Restricts the advances to approved items completed within the period as planned. Requires the State to repay from its Consolidated Revenue over a specified period 10/17ths of such advances, together with interest as determined.

Railways (Standard Gauge) Construction Act—Authorizes the construction of railways in terms of the Railway Standardisation Agreement Act, 1961, namely, from Kalgoorlie to Kwinana, Southern Cross to Koolyanobbing, Midland to East Perth, Kewdale to Kwinana, and Kalgoorlie to Kamballie.

Registration of Births, Deaths and Marriages Act—Repeals the Registration of Births, Deaths and Marriages Act, 1894–1948. Consolidates and amends the law relating to the registration of births, deaths and marriages, and the registration of legitimated children.

Stamp Act Amendment Act—Exempts transactions on the official short-term money market from liability to stamp duty.

State Housing Act Amendment Act—Reconstitutes the State Housing Commission by reducing from three to two the number of members who are employed in the State Public Service and substituting a person with a wide knowledge of and experience in housing conditions in the State. Provides statutory authority for the Commission to erect and lease houses to approved government employees.

State Transport Co-ordination Act Amendment Act—Dissolves The Western Australian Transport Board and transfers its powers and functions to a Commissioner of Transport assisted by a Deputy Commissioner and a Transport Advisory Board. Provides that the Board shall comprise the Commissioner as chairman, and four other members, two of whom shall represent rural industries and two city interests. Defines the powers and authorities of the Commissioner and of the Board.

Tallering Peak-Mullewa Railway Act—Authorizes Western Mining Corporation Limited to construct and maintain a railway and associated works between the Company's mining leases in the Tallering Peak area and the government railway at Mullewa, in accordance with the agreement ratified by the Iron Ore (Tallering Peak) Agreement Act, 1961.

Town Planning and Development Act Amendment Act—Transfers to the Metropolitan Region Planning Authority the functions previously exercised by the Town Planning Board in relation to interim development of the metropolitan region. Extends to the 31st December, 1962 the period of operation of interim development orders. Provides for the sharing of costs of road construction by subdividers of land in specified circumstances.

Traffic Act Amendment Act—Amends the definitions of " taxi-car " and " private taxi-car." Limits the number of taxi-car licences which may be issued in the Metropolitan Traffic Area to one licence for every 700 of the population instead of one for every 600 as formerly. Extends the power of the Governor to make regulations in respect of road markings, traffic signs and traffic lights, and the prohibition or restriction of standing or parking of vehicles. Expressly validates any markings, signs or lights made or installed by the Commissioner of Main Roads before the commencement of the Act.

Unauthorised Documents Act—Prohibits the unauthorized use of the Royal Arms and other specified arms and emblems. Prescribes penalties for offences.

Welfare and Assistance Act—Authorizes and regulates the provision by the State of financial assistance to or on behalf of indigent persons, or for payment of the funeral expenses of any person dying a pauper. Provides for the recovery of moneys advanced for these purposes.

Wheat Pool Act Amendment Act—Changes the title of the Wheat Pool Act to the " Grain Pool Act." Extends the definition of the term " growers " to include growers of oats.

Acts Passed during 1962

Agricultural Products Act Amendment Act—Constitutes an Apple Sales Advisory Committee of seven persons, to be appointed by the Minister, comprising the Director of Agriculture or his nominee as chairman, and six other members, of whom three shall be apple growers, two representative of distributors and one of consumers. Requires the Committee to inquire into the size of the anticipated crop and the quality, grade and types of apples produced, to assess the demand for apples within the State, and to make recommendations to the Minister as to which grades of apples should be marketed in the State and those of which the sale should be prohibited. Enables the Minister to prohibit the sale for consumption within the State of apples of any prescribed grade. Limits the duration of the Act to the period ending 31st December, 1963.

Business Names Act—Repeals the Business Names Act, 1942–1946. Re-enacts the main principles of the repealed Act. Provides that a resident agent must be appointed where the persons in respect of whom a business name is registered reside outside the State or have no fixed address within the State.

Charitable Trusts Act—Permits property given or held in trust for a specific charitable purpose to be disposed of, in certain circumstances, for a charitable purpose other than that originally intended. Prescribes procedure for the submission and approval of schemes in respect of charitable trusts and makes provision for their proper supervision by the Attorney-General and the Supreme Court.

Child Welfare Act Amendment Act—Appoints the Director of Child Welfare to be guardian of all wards of the State. Invests any Children's Court with the power to deal with an offence committed outside the area for which that Court exercises jurisdiction. Enables the Minister to extend the period of release on probation of a child until the child attains the age of 18 years. Authorizes the Minister to commit to the care of the Department a child left without parent, guardian or near relative. Increases from £2 10s. to £5 per week the maximum amount to be paid by near relatives for the maintenance of a child.

Companies Act Amendment Act—Makes provision for company charges or assignments which were previously registered under the Bills of Sale Act to be re-registered, on the appropriate renewal dates, under the Companies Act. Permits in the case of a life insurance company the use of the share premium account in the building up of the statutory reserve required to be maintained under Commonwealth law.

Constitution Acts Amendment Act (No. 2)—Deletes the requirement of a five-year period of residence after naturalization in order to qualify for election to the Legislative Council or the Legislative Assembly. Adds the condition that before any person may be elected to the Legislative Council or the Legislative Assembly he must be either an elector entitled to vote at an election for the Legislative Assembly or be qualified to become such an elector. Eliminates the proviso disqualifying an aboriginal native who is not the holder of a Certificate of Citizenship from being enrolled as an elector for the Legislative Council.

Declarations and Attestations Act Amendment Act—Authorizes a Justice of the Peace appointed for any part of Australia outside Western Australia to attest any instrument or statutory declaration required for use in this State.

Education Act Amendment Act—Extends the period of compulsory school attendance to the end of the school year in which the scholar attains the age of 14 years.

Electoral Act Amendment Act—Deletes the provision disqualifying an aboriginal native who is not the holder of a Certificate of Citizenship from being enrolled as an elector for the Legislative Assembly. Inserts provisions extending the definitions of " bribery " and " undue influence " to include attempts to induce an aboriginal native to enrol, or refrain from enrolling, as an elector.

Farmers' Debts Adjustment Act (Revival and Continuance) Act—Revives the Farmers' Debts Adjustment Act, 1930–1956 as from the 31st March, 1962 and continues its operation for five years.

Fisheries Act Amendment Act—Increases the penalties which may be imposed by regulation and prescribes an additional daily penalty in the case of a continuing breach. Empowers the Governor to

prohibit by proclamation the taking of fish of any kind for any period. Authorizes the Minister to limit the number of crayfish pots which may be used by any fishing boat. Specifies additional types of gear which may be confiscated if being used in contravention of the Act, and permits the seizure of any plant or appliance being used for cooking or processing undersized crayfish.

Grain Pool Act Amendment Act—Changes the name of the corporate body known as " The Trustees of the Wheat Pool of Western Australia " to " The Grain Pool of W.A."

Health Act Amendment Act—Enables the making of by-laws regulating the construction, equipment, maintenance and use of public swimming pools. Permits proceedings to be taken against a wholesaler as well as a vendor or manufacturer for the sale of any " deficient product." Empowers the Commissioner of Public Health to order a person suspected of harbouring the organism of a dangerous infectious disease to submit to a medical examination. Authorizes a medical practitioner to perform a blood transfusion on a child, to preserve life, without first having the consent of the person legally entitled to sanction the transfusion.

Inspection of Scaffolding Act Amendment Act—Extends the application of the Act to include the Crown. Enlarges the scope and the area of operation of the Act to include all scaffolding throughout the State.

Iron Ore (Mount Goldsworthy) Agreement Act—Approves an agreement between the State Government and three joint venturers, comprising Consolidated Gold Fields (Australia) Pty. Limited, Cyprus Mines Corporation and Utah Construction & Mining Co., following the calling of tenders by the State Government for the mining and export of up to 15 million tons of iron ore from the deposits at Mount Goldsworthy, about 62 miles east of Port Hedland, at the rate of approximately but not more than one million tons each year. Requires the State to grant a temporary reserve of the iron-ore deposits for a term of 18 months or until the companies decide not to continue with the project, whichever period may be the shorter. Requires the companies to commence immediately an intensive programme of geological exploration of the deposits, to make surveys for the most suitable route for a railway, and to carry out investigations concerning wharf sites, water supplies, townsites and market prospects. Provides that, should the companies decide to proceed with the rest of the project after the trial period of 18 months, they shall give formal notice of that intention. Requires the State to complete the survey of the mining area and grant a mineral lease ; to provide education and police services subject to provision by the companies of suitable buildings ; and to grant special leases of areas not exceeding in the aggregate 300 acres on Depuch Island for the purpose of establishing necessary works, including handling facilities and provision for the berthing of ore ships of not less than 40,000 tons dead weight. Makes provision for the granting of other special leases of land to be used for a railway route, a causeway from the mainland to Depuch Island, roads and aerodromes. Subject to payment by the companies of the capital cost and other reasonable charges, requires the State to provide aids to navigation in respect of the harbour and anchorage at Depuch Island. Other obligations of the State include assistance in obtaining suitable labour and an agreement not to impose, nor permit to be imposed by a State or local government instrumentality, discriminatory taxes or charges in respect of the undertaking. Requires the companies to develop and equip a mine with plant and gear capable of handling not less than 3,300 tons of ore per day ; to lay out on the mining area and on the mainland opposite Depuch Island sites for towns, and provide adequate and suitable housing, schools, roads and amenities ; to construct a standard-gauge railway from the mining area to the wharf on Depuch Island and provide sufficient rolling stock to haul the tonnage of ore to be produced ; to construct the necessary roads ; to build a causeway approximately three miles in length linking the mainland and Depuch Island ; to erect on the island a wharf, workshop, stockpiling and loading installations ; to carry out dredging operations ; to pay royalties as specified, furnish quarterly returns to the Minister, permit inspection of books and accounts, and pay the cost of surveys and an annual rental of £1,800 for the mineral lease. Specifies that the term of the agreement is 21 years and that it shall continue thereafter for successive periods of 21 years, subject to certain conditions enabling its termination.

Iron Ore (Tallering Peak) Agreement Act Amendment Act—Amends the Iron Ore (Tallering Peak) Agreement Act, 1961. Approves a supplementary agreement between the State Government and Western Mining Corporation Limited. Accepts the Company's contention that the tonnages and grade of ore at Tallering Peak alone are probably not capable of economic recovery and marketing, but could be developed economically if combined with those in the Koolanooka Hills area near Morawa. Approves the granting of the necessary additional mining leases. Requires the Company to construct a railway from the mining lease at Koolanooka Hills to Morawa.

Land Act Amendment Act—Provides that, while in general no person may acquire by conditional purchase more than 5,000 acres of land, the permissible area may, on the recommendation of the Minister and with the approval of the Governor, be increased up to a maximum of 10,000 acres to enable the holding to become an economic farm unit.

Licensing Act Amendment Act—Makes the basis of assessment of liquor licence fees the gross amount (including all duties) paid or payable for liquor purchased for the licensed premises during the period of 12 months immediately preceding the date when the licence fee becomes due. Prescribes that the fee payable shall be at the rate of 5½ per cent. of such amount, and provides that a return showing the quantity of liquor purchased must be furnished to the receiver of revenue once each year together with one-half of the annual fee, the remaining half to be paid within six months thereafter.

Members of Parliament, Reimbursement of Expenses, Act Amendment Act—From the 1st January, 1963, raises from £450 to £600 per annum the expenses reimbursement payable to metropolitan private members, with larger increases applying to non-metropolitan members, to Cabinet Ministers and to the holders of certain other offices.

Mental Health Act—Consolidates and amends the law relating to mental health and the treatment of mental disorders. Repeals the Lunacy Act, 1903–1950, the Inebriates Act, 1912–1919, the Mental Treatment Acts, 1917–1919 and 1927–1956 and the Mental Treatment (War Service Patients) Act, 1941.

Motor Vehicle (Third Party Insurance) Act Amendment Act—Requires The Motor Vehicle Insurance Trust to keep a separate account to be known as the Premium Surcharge Account into which must be paid moneys received as surcharge under the provisions of the Motor Vehicle (Third Party Insurance Surcharge) Act, 1962. Directs that moneys so received shall not form part of the Fund but must be paid into the Consolidated Revenue Fund. Requires the Commissioner of Police, as licensing authority for the Metropolitan Traffic Area, to pay amounts received in respect of the surcharge into the Consolidated Revenue Fund.

Motor Vehicle (Third Party Insurance) Act Amendment Act (No. 2)—Redefines the term "motor vehicle." Raises the limit on the amount of liability of The Motor Vehicle Insurance Trust to £6,000 in respect of any one passenger in a private vehicle and to £60,000 in respect of all passengers carried in any such vehicle.

Motor Vehicle (Third Party Insurance Surcharge) Act—Imposes a surcharge at the rate of £1 per year on premiums paid in respect of policies of insurance with The Motor Vehicle Insurance Trust.

Mount Goldsworthy-Ord Ranges-Depuch Island Railway Act—Authorizes the construction of the railway between Mount Goldsworthy and Depuch Island, as referred to in the Iron Ore (Mount Goldsworthy) Agreement Act, and of a spur line from that railway to the Ord Ranges.

Parliamentary Allowances Act Amendment Act—From the 1st January, 1963, increases from £2,220 to £2,500 the annual allowance payable to Members of the Legislative Council and Members of the Legislative Assembly. Deletes the entitlement to an additional £50 per annum in the case of a Member any part of whose electorate is more than 50 miles from Perth.

Pharmacy and Poisons Act Amendment Act—Replaces the apprenticeship system of training for pharmaceutical chemists by a new system and gives authority for its regulation. Provides that an apprentice who had begun apprenticeship training prior to the commencement of the Act shall be eligible to be registered as a pharmaceutical chemist on condition that he has completed that training on or before the 31st December, 1968.

Stamp Act Amendment Act (No. 2)—Abolishes the duty previously payable on receipts for amounts of £1 or more but less than £5, and increases to 3d. the duty payable on receipts for amounts of £5 or more but less than £50. Imposes higher rates of duty on transfers on sale of property and on hire purchase agreements. Simplifies the method of calculation of stamp duty on insurance policies.

Town Planning and Development Act Amendment Act—Extends interim development order provisions to the 31st December, 1963.

War Service Land Settlement Scheme Act Amendment Act—Enables the Minister to approve the sale of land the subject of a perpetual lease granted under the Scheme, without requiring that all debts to the Crown in respect of the land be first paid.

Western Australian Marine Act Amendment Act—Authorizes the making of regulations for the registration of pleasure boats. Empowers the Minister to grant by licence the right to the exclusive use of a particular area of water for the mooring of vessels.

THE JUDICATURE

Commonwealth Courts

Under the provisions of section 71 of the Commonwealth Constitution the judicial power of the Commonwealth is vested in a Federal Supreme Court called the High Court of Australia and in such other courts as the Parliament creates or invests with federal jurisdiction.

The High Court of Australia is the principal Commonwealth Court and has both original and appellate jurisdiction. The Court is constituted by the Judiciary Act 1903–1960 and consists of a Chief Justice and six other Justices. The Principal Registry is at Melbourne, Victoria and there is a District Registry in each of the other State capital cities, where sittings of the Court are held from time to time as required. A Full Court may consist of any two or more Justices sitting together, but the Act specifies cases where a Full Court shall be comprised of not less than three Justices and, in some circumstances, a greater number. The High Court is the ultimate court of appeal in Australian jurisdiction except where leave is given for an appeal to the Privy Council in London.

The Commonwealth Industrial Court was established by an amendment of 1956 to the Conciliation and Arbitration Act which gives the Court power to deal with judicial matters, as distinct from the functions of conciliation and arbitration performed by the Commonwealth Conciliation and Arbitration Commission. The Commonwealth Industrial Court comprises a Chief Judge and three other Judges. The Conciliation and Arbitration Act provides that, except in certain specified circumstances, the jurisdiction of the Court shall be exercised by not less than two Judges. Although, in general, decisions of the Industrial Court are final, appeal may be made to the High Court, subject to a grant of leave by the High Court.

The Federal Court of Bankruptcy is constituted under the Bankruptcy Act 1924–1960 which provides that the Court shall consist of a Judge or two Judges. The Act also extends jurisdiction in bankruptcy to certain Courts of the States, and in Western Australia it is exercised by the Supreme Court of the State.

State Courts of Western Australia

The Supreme Court of Western Australia, as constituted under the Supreme Court Act, 1935–1960, consists of a Chief Justice and such other Judges, not exceeding six in number, as may from time to time be appointed. The jurisdiction of the Court is exercised by a single Judge unless it is provided that an action must be brought before a Full Court. Any two or more Judges together comprise a Full Court except at a sitting as a court of criminal appeal, when there must be an uneven number of Judges. In addition to appeals in criminal cases, matters within the jurisdiction of the Full Court include applications for a new trial or to set aside a judgment, cases referred by a Judge for the consideration of the Full Court and special cases where all parties agree that a hearing should be before the Full Court. The Act provides for sittings of the Court as a circuit court in proclaimed districts and enables the appointment of days in each year for hearings in these districts. Appeal from a judgment of the Supreme Court of Western Australia lies to the High Court of Australia, subject to the provisions of the Judiciary Act 1903–1960 (Commonwealth).

At the 31st December, 1963 the composition of the Supreme Court was as shown below.

Chief Justice—	Puisne Judges—
The Honourable Sir Albert Wolff, K.C.M.G.	The Honourable J. E. Virtue
	The Honourable R. V. Nevile
	The Honourable G. B. D'Arcy
Senior Puisne Judge—	The Honourable John Hale
The Honourable Sir Lawrence Jackson	The Honourable O. J. Negus

The Court of Arbitration is constituted by the Industrial Arbitration Act, 1912–1961 and consists of three members, one of whom is President of the Court. The President must be a person qualified to be appointed a Judge of the Supreme Court. At the 31st December, 1963 the President of the Court was the Honourable R. V. Nevile. Of the remaining members, one is appointed on the recommendation of industrial unions of employers and the other on the recommendation of industrial unions of workers.

Reference to the powers and functions of the Court of Arbitration is made in Chapter V, Part 6 and an account of its work in the field of wage fixation is given in Chapter X, Part 2. [1]

[1] See *Appendix*.

STATE REPRESENTATION OVERSEAS AND IN OTHER STATES

Western Australia has been represented in the United Kingdom by an Agent-General since 1892, the first appointment to the post being that of Sir Malcolm Fraser. An Office is maintained at Savoy House, 115 Strand, London, W.C.2. Its functions include the purchase of government stores and equipment, service to Western Australian commercial and business interests and the provision of various types of assistance to visitors from Western Australia. The Agent-General for Western Australia is the Honourable E. K. Hoar, who was appointed to the office in 1957.

Branches of the Tourist Bureau have been established in New South Wales at 22 Martin Place, Sydney, in Victoria at 2 Royal Arcade, Melbourne, C.1, in South Australia at 34 King William Street, Adelaide, and in the Northern Territory at Cavenagh Street, Darwin.

THE LOCAL GOVERNMENT SYSTEM

The function of local government in Western Australia is performed by a number of Councils exercising powers conferred by the Parliament of the State. Each of these authorities consists of members elected by a local community and is responsible for the provision of many of the services necessary for the organization and welfare of the community which it represents.

As early as 1838 an Act providing a measure of local government was passed and under its provisions the management and control of the town of Perth was vested in a body of trustees. The first elected Town Trust was constituted at Perth in 1842 under an Act of 1841 for the " Improvement of Towns in Western Australia ". The Trust was dissolved in 1858 and replaced by a City Council, the town of Perth having been constituted a city when it became the seat of a Bishop in 1856.

Legislation was enacted in 1871 establishing Municipalities and Road Boards throughout the Colony. The existing Statute regulating the operations of the local authorities is the Local Government Act, 1960–1963, which is administered through a Department of Local Government by the Minister for Local Government. This Act consolidates the law relating to local government in Western Australia, and by its provisions the Municipal Corporations Act, the Road Districts Act and a number of other, less important, Acts were repealed. The legislation came into operation on the 1st July, 1961 and from that date new designations were applied to many local government districts, bodies and offices. Former Municipalities, other than cities, became known as " Towns " and Road Districts were renamed " Shires ". Municipalities which already had city status remained " Cities ". The executive body in each local government district became a " Council ", City Councils and Town Councils being presided over by a Mayor, and Shire Councils by a President. The chief non-elective executive office of a City or a Town is that of " Town Clerk " and of a Shire, that of " Shire Clerk ".

At the 31st December, 1962 there were five City Councils, 15 Town Councils and 125 Shire Councils in Western Australia.

Local Government Districts

At the date of commencement of the Local Government Act, the only unincorporated area in Western Australia was King's Park, a public reserve of almost one thousand acres in Perth, all other land being incorporated within the district of a City, Town or Shire.

On presentation of a petition signed by a prescribed minimum number of ratepayers, the number varying with the subject matter, the Governor may by Order constitute any part of the State as a Town ; constitute any unincorporated area as a Shire ; constitute as a new Shire any part of an existing Shire ; divide a Shire into two or more Shires ; sever portion of a district and annex the portion to an adjoining district, or constitute the portion as a new Town or Shire ; annex to a district any adjacent unincorporated areas ; divide a district into wards ; or abolish a district and dissolve the local governing authority.

The Act establishes a Local Government Boundaries Commission of three members, one being an officer of the Department of Local Government, who is Chairman of the Commission. The other members must be persons having experience in local government and nominated by associations of local government authorities. The Minister may refer to the Commission any question concerning the constitution or alteration of the constitution of local government districts. Every case where authorities are unable to agree on a matter of amalgamation or severance of territory must be referred to the Commission.

On the petition of the local authority concerned, the Governor may by Order declare to be a City any district which satisfies certain specified requirements. These requirements are that, during the three years immediately preceding the declaration, it shall have maintained a population of not less than 30,000 persons if situated in the metropolitan area as declared for the purposes of the Act, or not less than 20,000

persons if situated outside that area ; and have maintained a gross revenue of £100,000 for each of the three years. In addition the district must be clearly distinguishable as a centre of population having a distinct civic centre with adequate halls and cultural facilities, and must have sufficient residential, commercial and industrial centres to justify its declaration as a separate city. The five Cities in Western Australia are all situated in the Metropolitan Statistical Division and each of them had been granted city status before the requirements imposed by the present legislation became operative. The Cities are Perth (proclaimed in 1856), Fremantle (1929), Subiaco (1952), Nedlands (1959) and South Perth (1959).

The boundaries of local government districts as they existed at the 31st December, 1962 are delineated on the map of the State at the back of the Year Book and the names and designations as at that date are listed on the pages immediately preceding the map.

Constitution and Electoral Provisions

The provisions of the Local Government Act relating to the composition of a City Council or a Town Council require that, in addition to the Mayor, there shall be, where the population is less than 1,000, six councillors ; where the population is between 1,000 and 5,000, nine councillors ; and if the population exceeds 5,000, twelve councillors if the district is not divided into wards but, where the district is divided into wards, three councillors for each ward. It is provided that a Shire Council shall consist of not less than five nor more than thirteen members, including the President.

Two methods of election to the office of Mayor or of President are prescribed. In the case of a City or Town, election is usually by a poll of the electors enrolled for the district. The President of a Shire is usually elected by the councillors from among their own number. It is provided, however, that a City or Town may adopt the system of election of the Mayor by the councillors, and that a Shire may conduct a poll of its electors for election to the office of President. The question of the adoption of the alternative system must, in all cases, be determined by submission to a poll of the electors, after delivery to the Mayor or the President of a resolution of a majority of the councillors or a petition signed by one-tenth of the electors, or by fifty electors, whichever is the greater.

The Act creates the office of Deputy Mayor, in the case of a City or a Town, and of Deputy President in the case of a Shire, and requires that the Council shall elect one of the councillors to the office.

Provision is made for local government elections to be held on the fourth Saturday in May of each year. Membership of a Council is elective in all cases, the qualified electors being adult natural-born or naturalized British subjects who own or occupy ratable land in the district. The preferential system of voting is used and representation is generally on the basis of wards into which the district may be divided. Plural voting applies, an elector being entitled, in accordance with the ratable value of the property owned or occupied by him, to a number of votes which may not, however, exceed four in elections for Mayor or President, or two in elections for councillor. Subject to disqualification on certain specified grounds, all adult persons who are natural-born or naturalized British subjects owning or occupying ratable land within the district are eligible for election to the Council of the district, whether as Mayor, President or councillor.

The Act contains provisions enabling nominees of corporations owning land in a district to vote at local government elections and to be elected to membership of the Council.

The term of office of a Mayor or a President is two years if elected by the electors of the district, or one year if elected by the Council. Councillors are elected for a term of three years, some of their number, varying with the total membership of the Council, retiring each year. On the expiration of their term of office, all members, including the Mayor and the President, are eligible for re-election if not subject to any of the disqualifications contained in the Act.

It is provided that, if in a particular district there should at any time be no Council or not sufficient councillors to form a quorum, a Commissioner may be appointed to exercise all the powers of the local authority.

Functions of Local Authorities

The functions and powers of local authorities are extremely diverse in character. They are prescribed in detail in the Local Government Act and some of the more important of them are referred to in later Chapters of the Year Book. For example, reference to local government activity in the fields of road construction and maintenance will be found in Chapter VI Part 1 and Chapter IX Part 2, the provision of parks, gardens and recreation grounds in Chapter VII Part 1, libraries in Chapter V Part 2, public transport facilities in Chapter IX Part 2, water supplies in Chapter VII Part 2, town planning

and building control in Chapter V Part 4, and the licensing of vehicles and road traffic control in Chapter IX Part 2. Among the many other powers of local authorities are those relating to hospitals and nursing services, kindergartens, hostels for school children, community centres, dental clinics, infant and maternal health centres, day nurseries, jetties, swimming baths, swimming pools, sanitation and disposal of refuse, fire prevention, eradication of noxious weeds and vermin, electricity generation, aerodromes, abattoirs, quarries, pounds and cemeteries. Under the provisions of the Health Act local authorities are responsible for certain aspects of health administration.

The operations of any local government authority may be subject to investigation by a person appointed by the Governor or the Minister and having, for the purposes of the inquiry, the powers of a Royal Commission.

Financial Provisions

Financial powers of local authorities, although derived mainly from the Local Government Act, are also provided by other statutes, including the Health Act, the Water Boards Act, the Vermin Act, the Fire Brigades Act, the Cemeteries Act, the Library Board of Western Australia Act, the Argentine Ant Act and the Noxious Weeds Act. Revenue from vehicle licence fees payable under the provisions of the Traffic Act is another important item in local government finance.

Before the commencement of the Local Government Act on the 1st July, 1961, a number of rates, in addition to those authorized by local government legislation, were imposed as separate levies. These included health, sanitary and sewerage rates, water rates and vermin rates, as well as rates relating to fire brigades, cemeteries, libraries and the control of Argentine ants and noxious weeds. Under the provisions of the Local Government Act, the local authorities may include these separate levies in the general rate provided for in the Act.

The general rate for any year is determined, subject to certain statutory limits, by dividing the anticipated total financial requirement for that year by the total value of ratable property in the district. In assessing this value, every local authority must adopt valuations made by the Taxation Department, by the water supply authority for the district, or by a qualified valuer (or valuers) appointed by the Council. The Act provides for the constitution of Valuation Appeal Courts, to which appeals may be made on matters concerning valuations of property and liability for rates as assessed by the Council.

Valuations may be on the basis of either " unimproved capital value " or " annual value ". The unimproved value generally represents the price which the rated land might be expected to realize if sold on the open market and, as the term implies, excludes any improvements. The annual value is an estimate of the annual rental value of the property including improvements, but with a prescribed deduction to cover rates, repairs, insurance and other related expenditure. Generally, City Councils and Town Councils are required to assess the general rate on the basis of annual value, and Shire Councils on unimproved value. It is provided, however, that any Council may, under certain specified conditions, adopt the alternative basis. Although in general a Council is required to levy a rate which is uniform throughout its district, it may differentiate in rating by charging a higher rate in a specified area where expenditure, including loan interest and repayments, is incurred in providing special services for the benefit of that area.

Local authorities are authorized to raise loans for works and undertakings and for the liquidation of existing loan debts. Borrowing by means of a special bank overdraft is permissible, with the consent of the Minister, for the installation of sewerage connexions or septic tanks and, with the approval of the Governor, for other works or undertakings. Money may also be borrowed by the sale of debentures, repayment being either by the system of reducible principal or by means of a sinking fund. Payments to debenture holders are made at prescribed intervals. Under the system of reducible principal, the local authority undertakes to pay both principal and interest by fixed instalments. Where redemption is by means of a sinking fund, the local authority is required to establish and maintain the necessary fund at the State Treasury. Interest on the loan is normally paid half-yearly and the full amount of the loan is repaid at maturity.

The extent of loan raisings for works and undertakings is controlled by a provision which, except with the specific approval of the Governor, imposes a limit on the borrowings of an authority. This limit is determined by deducting the net total debt on existing loans from a sum equal to ten times the amount obtained by subtracting from the average of the ordinary revenue of the authority during the preceding two years the average, for the same period, of its annual expenditure on the servicing of loans. The legislation allows that balances standing to the credit of sinking funds for loan repayment, as well

as amounts actually repaid, may be deemed to be repayments for the purpose of calculating net total debt. In the case of borrowings to liquidate existing loans, it is provided that the money raised shall not exceed the outstanding balance of the loan.

Before a loan may be raised by the issue of debentures, approval of the borrowing must be obtained from the State Treasury and the local authority must then publish in a newspaper and in the *Government Gazette* a notification of its intention to borrow money, including a statement of the amount of the proposed loan, its purpose and other relevant matters. Except in the case of a loan to liquidate an existing loan debt, the ratepayers of the district may demand that the proposition be submitted to a poll and the Council may proceed with the raising of the loan only if the result of the poll is favourable.

Certain of the works and undertakings for which loan moneys may be used are specified in the Local Government Act. They include the construction of streets, roads and bridges, sewers, drains and waterworks ; the erection or purchase of electric lighting plant, gas works and stone quarries ; the provision of hostels for school children, libraries and other recreational facilities ; the construction of civic and other buildings ; and the purchase of land, materials and equipment. Where a particular work or undertaking is not specified in the Act the Governor may approve of it as a project for which money may be borrowed.

The financial transactions of local government authorities are subject to annual audit either by an auditor (or auditors) appointed by the Council or by a government inspector appointed by the Minister. To qualify for the office of auditor, a person must be a member of a specified institute or society of accountants and be registered as an auditor under the Companies Act. Appointment is for a term not exceeding two years, at the end of which time the holder of the office is eligible for reappointment.

The financial year for all Councils ends on the 30th June.

Details of the revenue and expenditure of local authorities during the five-year period ending with the financial year 1961–62 are given in the section *Local Government Finance* in Chapter VI, Part 1.

CHAPTER IV—POPULATION AND VITAL STATISTICS

NOTE—Reference is made in the final section of Part 1 of this Chapter to the full-blood aboriginal population of Western Australia. In accordance with Australia-wide practice, all population and vital statistics dealt with elsewhere in this Chapter exclude particulars of full-blood aboriginals.

PART 1—POPULATION

The State of Western Australia, although comprising almost one-third of the total area of Australia, contains little more than seven per cent. of the population.

At the end of 1829, the year of establishment of the Colony, there were 1,003 persons in Western Australia. Progress in the early years was slow, and in 1849 the population was still less than 5,000. Transportation of convicts, begun in the following year, resulted in some acceleration, but it was not until the discovery of gold in the Kimberley in 1885 and the rich finds at Coolgardie in 1892 and at Kalgoorlie in 1893 that any marked increase took place. This development was so rapid that, in the last decade of the century, the population was almost quadrupled, from 48,502 at the end of 1890 to 179,967 in 1900. The rate of growth in those years has never been approached in the present century, as will be seen from the table below, but the average annual rate of increase of Western Australia's population from the beginning of the century to the end of 1962, 2·36 per cent., has been higher than that of any other State and of the Commonwealth as a whole, 1·72 per cent.

The table shows the population at ten-yearly intervals from 1830, the numerical and percentage increase during each decade and the corresponding average annual rate. The population at the end of each year from 1953 to 1962 is also shown, together with the increase in each year and during the ten-year period ended 31st December, 1962.

ESTIMATED POPULATION†—1830–1962

At 31st December:	Males	Females	Persons	Increase		
				Number	Per cent.	Average Annual Rate (per cent.)
1830	877	295	1,172			
1840	1,434	877	2,311	1,139	97·18	7·03
1850	3,576	2,310	5,886	3,575	154·69	9·80
1860	9,529	5,698	15,227	9,341	158·70	9·97
1870	15,474	9,610	25,084	9,857	64·73	5·12
1880	16,559	12,460	29,019	3,935	15·69	1·47
1890	28,854	19,648	48,502	19,483	67·14	5·27
1900	110.088	69,879	179,967	131,465	271·05	14·01
1910	157,971	118,861	276,832	96,865	53·82	4·40
1920	176,895	154,428	331,323	54,491	19·68	1·81
1930	232,868	198,742	431,610	100,287	30·27	2·68
1940	248,734	225,342	474,076	42,466	9·84	0·94
1950	294,758	277,891	572,649	98,573	20·79	1·91
1960	372,665	358,368	731,033	158,384	27·66	2·47
1953	326,372	305,371	631,743	18,808	3·07	
1954	334,342	314,365	648,707	16,964	2·69	
1955	343,838	324,771	668,609	19,902	3·07	
1956	350,333	330,935	681,268	12,659	1·89	
1957	356,195	339,039	695,234	13,966	2·05	
1958	361,441	345,755	707,196	11,962	1·72	
1959	366,253	352,438	718,691	11,495	1·63	
1960	372,665	358,368	731,033	12,342	1·72	
1961	379,947	366,258	746,205	15,172	2·08	
1962	389,304	376,411	765,715	19,510	2·61	
Ten years ended 31st December, 1962				152,780	24·93	2·25

† *See* letterpress *Estimates of Population* on page 123.

CENSUSES

In this section, figures relating to the Census of the 30th June, 1961 have been amended, where necessary, in accordance with the final Census tabulations.

The first systematic census of the Colony was taken on the 10th October, 1848. Since then, there have been 12 enumerations, the latest at the 30th June, 1961.

The population disclosed at each census, its relation to the Australian total, and the masculinity are shown in the next table.

POPULATION AT EACH CENSUS DATE—WESTERN AUSTRALIA AND AUSTRALIA 1848–1961

Date of Census	Western Australia			Australia	Western Australia	
	Males	Females	Persons	Persons	Proportion of Australia (per cent.)	Masculinity (*a*)
1848—10th October	2,818	1,804	4,622	326,445	1·42	156·2
1854—30th September	7,779	3,964	11,743	671,436	1·75	196·2
1859—31st December	9,522	5,315	14,837	1,097,305	1·35	179·2
1870—31st March	15,375	9,410	24,785	1,606,057	1·54	163·4
1881—3rd April	17,062	12,646	29,708	2,250,194	1·32	134·9
1891—5th April	29,807	19,975	49,782	3,177,823	1·57	149·2
1901—31st March	112,875	71,249	184,124	3,773,801	4·88	158·4
1911—3rd April	161,565	120,549	282,114	4,455,005	6·33	134·0
1921—4th April	177,278	155,454	332,732	5,435,734	6·12	114·0
1933—30th June	233,937	204,915	438,852	6,629,839	6·62	114·2
1947—30th June	258,076	244,404	502,480	7,579,358	6·63	105·6
1954—30th June	330,358	309,413	639,771	8,986,530	7·12	106·8
1961—30th June	375,452	361,177	736,629	10,508,186	7·01	104·0

(*a*) Number of males to each 100 females.

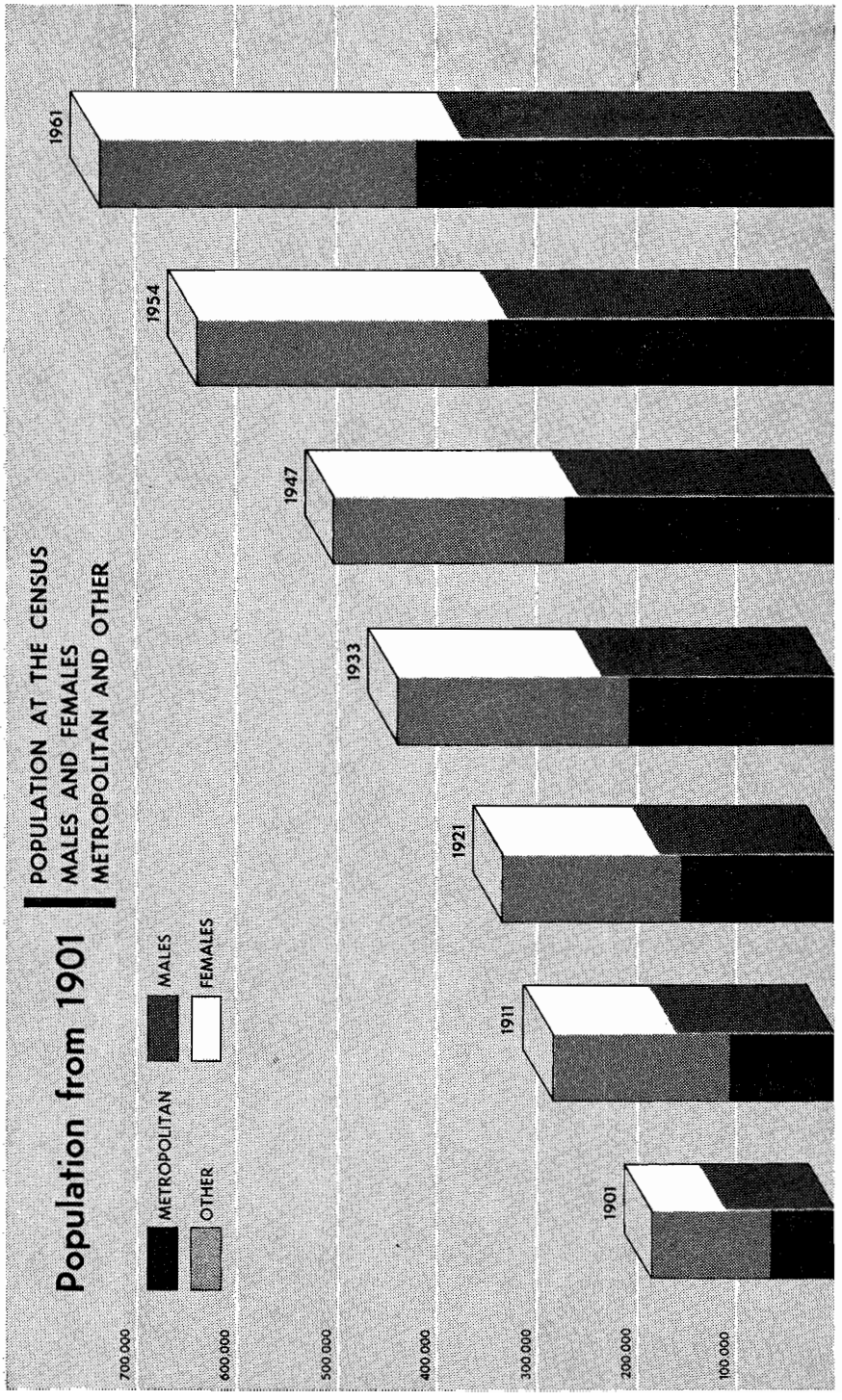
The Census of 1881 was the first taken simultaneously in all the Australian Colonies. For the dates shown in the years 1848, 1854 and 1870, the Australian population totals have been estimated from other sources. However, it is thought that the figures showing the proportion which Western Australian population bore to the Australian total at those dates are not seriously affected on that account.

Masculinity—The sharp rise in masculinity between the Census of 1848 and the three succeeding enumerations was doubtless a result of the transportation of convicts which began in 1850 and continued until 1868. During this period a total of 9,668 convicts, all of whom were males, were brought to the Colony. The high levels of masculinity disclosed by the Censuses of 1891 and 1901 may be attributed to the influx of a predominantly male population following the gold discoveries of 1885 and later years.

The masculinity of Western Australian population has continued to be high. At the 30th June, 1961, it stood at 104·0 and was higher than in any other State except Queensland (104·1) and was significantly higher than the Commonwealth figure of 102·2.

Age Composition—The following table shows a division of the population into the proportions of those aged under 15 years, from 15 to 64 years, and 65 years and over at each census from 1881. These divisions have been chosen as being broadly representative of the child population, persons of working age, and those beyond normal working age. The proportions of minors in the population are also shown.

Of particular significance are the decrease between 1921 and 1947 in the proportion of children in the population, due mainly to the fall in the birth rate during the late 1920's and the 1930's, and the high level shown by the 1961 figure, resulting from the improvement in the birth rate and the introduction of large numbers of migrant children during the post-war period. The decline, to 60·0 per cent., in the proportion of those of working age is another important feature.


Population from 1901
POPULATION AT THE CENSUS
MALES AND FEMALES
METROPOLITAN AND OTHER
METROPOLITAN
OTHER
MALES
FEMALES
700,000
600,000
500,000
400,000
300,000
200,000
100,000
1901
1911
1921
1933
1947
1954
1961

PERCENTAGE OF POPULATION IN CERTAIN AGE GROUPS—CENSUSES, 1881–1961

Census Year (a)	Under 15 years	15 years and under 65	65 years and over	Under 21 years	21 years and over
MALES					
1881	33·7	63·0	3·3	44·3	55·7
1891	29·0	67·3	3·7	38·5	61·5
1901	23·8	74·2	2·0	31·8	68·2
1911	27·5	70·1	2·4	36·6	63·4
1921	30·7	65·8	3·5	40·9	59·1
1933	26·2	67·8	6·0	36·7	63·3
1947	26·7	65·4	7·9	35·9	64·1
1954	30·1	63·2	6·7	38·3	61·7
1961	32·7	60·8	6·5	41·9	58·1
FEMALES					
1881	44·8	53·7	1·5	59·3	40·7
1891	42·0	56·1	1·9	54·7	45·3
1901	37·1	61·4	1·5	47·1	52·9
1911	36·0	61·7	2·3	46·8	53·2
1921	34·1	62·9	3·0	45·4	54·6
1933	28·8	65·9	5·3	40·3	59·7
1947	27·3	64·4	8·3	37·0	63·0
1954	30·8	61·1	8·1	39·2	60·8
1961	32·4	59·2	8·4	41·6	58·4
PERSONS					
1881	38·4	59·1	2·5	50·7	49·3
1891	34·2	62·8	3·0	45·0	55·0
1901	28·9	69·3	1·8	37·7	62·3
1911	31·1	66·5	2·4	40·9	59·1
1921	32·3	64·5	3·2	43·0	57·0
1933	27·4	66·9	5·7	38·4	61·6
1947	27·0	64·9	8·1	36·5	63·5
1954	30·4	62·2	7·4	38·8	61·2
1961	32·5	60·0	7·5	41·7	58·3

(a) For Census dates, *see* table on page 118.

AGE DISTRIBUTION OF THE POPULATION—CENSUS, 30th JUNE, 1961

Age Last Birthday (years)	Number			Proportion of Total (per cent.)		
	Males	Females	Persons	Males	Females	Persons
0– 4	41,965	39,951	81,916	11·18	11·06	11·12
5– 9	41,225	39,529	80,754	10·98	10·94	10·96
10–14	39,421	37,620	77,041	10·50	10·42	10·46
15–19	29,609	28,129	57,738	7·89	7·79	7·84
20–24	24,565	23,312	47,877	6·54	6·45	6·50
25–29	22,693	21,628	44,321	6·04	5·99	6·02
30–34	25,748	23,899	49,647	6·86	6·62	6·74
35–39	26,238	24,396	50,634	6·99	6·75	6·87
40–44	21,973	21,692	43,665	5·85	6·01	5·93
45–49	23,098	22,177	45,275	6·15	6·14	6·14
50–54	21,342	19,034	40,376	5·68	5·27	5·48
55–59	18,883	15,950	34,833	5·03	4·42	4·73
60–64	14,099	13,356	27,455	3·76	3·70	3·73
65–69	9,445	10,795	20,240	2·51	2·99	2·75
70–74	7,194	8,548	15,742	1·92	2·37	2·14
75–79	4,381	5,684	10,065	1·17	1·57	1·37
80–84	2,402	3,409	5,811	0·64	0·94	0·79
85–89	913	1,561	2,474	0·24	0·43	0·33
90–94	227	424	651	0·06	0·12	0·09
95–99	30	77	107	0·01	0·02	0·01
100 and over	1	6	7	0·00	0·00	0·00
Total	375,452	361,177	736,629	100·00	100·00	100·00
0– 4	41,965	39,951	81,916	11·18	11·06	11·12
5–14	80,646	77,149	157,795	21·48	21·36	21·42
15–20	34,733	33,025	67,758	9·25	9·15	9·20
Under 21	157,344	150,125	307,469	41·91	41·57	41·74
21–44	116,093	110,031	226,124	30·92	30·46	30·70
45–64	77,422	70,517	147,939	20·62	19·52	20·08
65 and over	24,593	30,504	55,097	6·55	8·45	7·48
Total	375,452	361,177	736,629	100·00	100·00	100·00

Birthplace—The following table gives a summary of population classified according to birthplace as shown by the 1961 Census. More than three-quarters (77·68 per cent.) of the population at the 30th June, 1961 gave Australia as their birthplace. A total of 657,460 persons, almost nine-tenths of the population, were found to have been born in Australia, New Zealand, the United Kingdom or the Republic of Ireland. Of the 66,418 persons born in continental Europe, more than one-half were born in Italy (25,249 persons) or the Netherlands (11,163 persons).

BIRTHPLACE OF THE POPULATION—CENSUS, 30th JUNE, 1961

Birthplace	Number			Proportion of Total (per cent.)		
	Males	Females	Persons	Males	Females	Persons
Australia	284,780	287,402	572,182	75·85	79·57	77·68
New Zealand	965	948	1,913	0·26	0·26	0·26
Europe—						
United Kingdom and Republic of Ireland	44,452	38,913	83,365	11·84	10·77	11·32
Italy	14,934	10,315	25,249	3·98	2·86	3·43
Netherlands	6,154	5,009	11,163	1·64	1·39	1·51
Yugoslavia	3,580	2,296	5,876	0·95	0·64	0·80
Germany	2,715	2,868	5,583	0·72	0·79	0·76
Poland	2,795	1,916	4,711	0·74	0·53	0·64
Greece	2,260	1,828	4,088	0·60	0·51	0·55
Other	5,721	4,027	9,748	1·53	1·11	1·32
Total—Europe	82,611	67,172	149,783	22·00	18·60	20·33
Other Birthplaces	7,096	5,655	12,751	1·89	1·57	1·73
Grand Total	375,452	361,177	736,629	100·00	100·00	100·00

Nationality—The population at the 1961 Census is classified in the next table according to nationality. Over 95 per cent. of the population (702,890 persons) were of British nationality. Of the 164,447 persons born outside Australia, 130,708 (79·48 per cent.) were of British nationality, 13,905 (8·46 per cent.) of Italian nationality, and 7,367 (4·48 per cent.) of Dutch nationality.

NATIONALITY OF THE POPULATION—CENSUS, 30th JUNE, 1961

Nationality	Number			Proportion of Total (per cent.)		
	Males	Females	Persons	Males	Females	Persons
British (a)—						
Born in Australia	284,780	287,402	572,182	75·85	79·57	77·68
Born outside Australia	71,811	58,897	130,708	19·13	16·31	17·74
Total—British	356,591	346,299	702,890	94·98	95·88	95·42
Foreign—						
Italian	7,632	6,273	13,905	2·03	1·74	1·89
Dutch	3,916	3,451	7,367	1·04	0·96	1·00
Yugoslav	1,267	910	2,177	0·34	0·25	0·29
German	1,021	876	1,897	0·27	0·24	0·26
Greek	905	977	1,882	0·24	0·27	0·26
Polish	1,033	750	1,783	0·28	0·21	0·24
American (U.S.)	322	142	464	0·08	0·04	0·06
Austrian	270	161	431	0·07	0·04	0·06
Ukrainian	176	120	296	0·05	0·03	0·04
Other (including Stateless)	2,319	1,218	3,537	0·62	0·34	0·48
Total—Foreign	18,861	14,878	33,739	5·02	4·12	4·58
Grand Total	375,452	361,177	736,629	100·00	100·00	100·00

(a) All persons of individual citizenship status who by virtue of the Nationality and Citizenship Act 1948 are deemed to be British subjects. For the purposes of this table Irish nationality is included with British.

Religion—At the 1961 Census, as in the three previous enumerations, it was stated on the schedule that there was no legal obligation to reply to the question on religion. The proportion of non-reply in the total population was 10·43 per cent., 76,796 persons refraining from answering the question. Non-reply occurred more frequently among the males than among the females, 11·13 per cent. of males failing to answer compared with 9·69 per cent. of females.

The following table shows the numbers of adherents of the principal religions and sects, as disclosed by the Census, together with their proportional relationship to total population and to the total number of replies.

RELIGION OF THE POPULATION—CENSUS, 30th JUNE, 1961

Religion	Number			Proportion (per cent.) of:—	
	Males	Females	Persons	Total Population	Total Replies
Christian—					
Church of England	146,798	143,065	289,863	39·35	43·93
Catholic, Roman (*a*)	56,519	49,533	106,052	14·40	16·07
Catholic (*a*)	36,116	38,005	74,121	10·06	11·23
Methodist	37,455	39,010	76,465	10·38	11·59
Presbyterian	20,403	20,180	40,583	5·51	6·15
Churches of Christ	4,757	5,504	10,261	1·39	1·56
Greek Orthodox	4,955	4,102	9,057	1·23	1·37
Baptist	4,311	4,650	8,961	1·22	1·36
Congregational	3,826	4,200	8,026	1·09	1·22
Salvation Army	2,174	2,371	4,545	0·62	0·69
Lutheran	2,261	2,199	4,460	0·60	0·68
Seventh Day Adventist	1,691	2,099	3,790	0·51	0·57
Brethren	426	431	857	0·12	0·13
Protestant (undefined)	2,675	2,559	5,234	0·71	0·79
Other (including Christian undefined)	4,084	4,672	8,756	1·19	1·33
Total—Christian	328,451	322,580	651,031	88·38	98·67
Non-Christian—					
Hebrew	1,404	1,378	2,782	0·38	0·42
Other	649	187	836	0·11	0·13
Total—Non-Christian	2,053	1,565	3,618	0·49	0·55
Indefinite	1,106	922	2,028	0·27	0·30
No Religion	2,051	1,105	3,156	0·43	0·48
Total Replies	333,661	326,172	659,833	89·57	100·00
No Reply	41,791	35,005	76,796	10·43	
Grand Total	375,452	361,177	736,629	100·00	

(*a*) So described in individual census schedules.

Conjugal Condition—The following table shows the numbers of persons of each conjugal condition recorded at the 1961 Census, together with the proportions which these numbers bore to the total population and to the population aged 15 years and over.

CONJUGAL CONDITION OF THE POPULATION—CENSUS, 30th JUNE, 1961

Conjugal Condition	Population of All Ages			Population aged 15 years and over		
	Males	Females	Persons	Males	Females	Persons
NUMBER						
Never Married	197,553	165,971	363,524	74,942	48,871	123,813
Married	162,838	160,456	323,294	162,838	160,456	323,294
Married but Permanently Separated	4,629	5,201	9,830	4,629	5,201	9,830
Widowed	7,137	26,320	33,457	7,137	26,320	33,457
Divorced	3,295	3,229	6,524	3,295	3,229	6,524
Total	375,452	361,177	736,629	252,841	244,077	496,918
PROPORTION OF TOTAL (PER CENT.)						
Never Married	52·62	45·95	49·35	29·64	20·03	24·92
Married	43·37	44·43	43·89	64·41	65·74	65·06
Married but Permanently Separated	1·23	1·44	1·33	1·83	2·13	1·98
Widowed	1·90	7·29	4·54	2·82	10·78	6·73
Divorced	0·88	0·89	0·89	1·30	1·32	1·31
Total	100·00	100·00	100·00	100·00	100·00	100·00

Industry—Classifications of the population according to industry at the 1961 Census will be found in Chapter X—*Employment, Wages and Prices.*

Occupational Status—An analysis of the population according to occupational status at each Census from 1901 to 1961 appears in Chapter X—*Employment, Wages and Prices.*

Dwellings—Certain particulars of dwellings at the Censuses of 1954 and 1961 are presented in Chapter V—*Social Condition.*

ESTIMATES OF POPULATION

Estimates as at Specific Dates

For dates other than those of the periodic census of population, it is necessary to rely upon estimates based on statistics of births and deaths and of recorded movements of population interstate and oversea. The estimates are made by adding to the census figures the subsequent *natural increase* (the excess of births over deaths) and recorded *net migration* (the excess of arrivals over departures). The sum of the elements *natural increase* and *net migration* is referred to as *total increase.*

Estimates of the population of Australia and of each of the States and Territories are prepared by the Commonwealth Statistician as at 31st March, 30th June, 30th September and 31st December in each year. Because the available records of interstate movement are incomplete, these intercensal estimates as they apply to States and Territories are approximate and are revised when the results of the next succeeding census become known.

For this reason, all State population statistics for dates or periods subsequent to the 30th June, 1961, when the last census was taken, are to be regarded as subject to revision after the next census.

ESTIMATED POPULATION

Year	At 30th June			At 31st December		
	Males	Females	Persons	Males	Females	Persons
1953	320,352	300,195	620,547	326,372	305,371	631,743
1954	(a) 330,358	(a) 309,413	(a) 639,771	334,342	314,365	648,707
1955	338,075	319,040	657,115	343,838	324,771	668,609
1956	346,762	327,767	674,529	350,333	330,935	681,268
1957	352,424	335,181	687,605	356,195	339,039	695,234
1958	357,425	342,140	699,565	361,441	345,755	707,196
1959	363,019	349,051	712,070	366,253	352,438	718,691
1960	367,685	354,395	722,080	372,665	358,368	731,033
1961	(a) 375,452	(a) 361,177	(a) 736,629	379,947	366,258	746,205
1962	384,132	370,345	754,477	389,304	376,411	765,715

(a) Census figures.

Estimates of Mean Population

It is often useful to relate a given characteristic to population in order to express it in *per capita* terms or as " per head of population." In some cases it is appropriate to relate a characteristic to the population as at a specified date as, for example, savings bank balances per head of population at the 30th June, or motor vehicles per head of population at the 31st December.

Where events, as for instance births or deaths, are taking place continuously throughout a period, it is obviously not appropriate to relate these events to the population as at a specific date. It is necessary, therefore, to devise a measure which takes account of the change in population which occurs continuously throughout any period. This measure is known as the *mean population.*

As stated earlier, estimates of population are prepared as at the end of each quarter of the year. The mean population of a quarter might be taken to be the average, or arithmetic mean, of the populations at the beginning and the end of the quarter. If a represents the population at the beginning of a year and b, c, d and e the populations at the end of the first, second, third and fourth quarters respectively, these quarterly means would then be $\frac{1}{2}(a + b)$ for the first quarter, $\frac{1}{2}(b + c)$ for the second, $\frac{1}{2}(c + d)$ for the third and $\frac{1}{2}(d + e)$ for the fourth quarter. The mean population for the year might then be taken as the arithmetic mean of the four quarterly average populations, or

$$\tfrac{1}{4}\{\tfrac{1}{2}(a + b) + \tfrac{1}{2}(b + c) + \tfrac{1}{2}(c + d) + \tfrac{1}{2}(d + e)\}$$

which may be more simply expressed as $\frac{1}{8}(a + 2b + 2c + 2d + e)$. This method of deriving mean

population had been in use in Western Australia prior to its general adoption by the 1903 Conference of Australian Statisticians. It was later superseded by the more precise measure

$$1/12(a + 4b + 2c + 4d + e)$$

which is now commonly used in Australian statistics. In order to establish uniformity with current practice, estimates of mean population for 1901 and later years have been revised, where necessary, by the application of this formula.

ESTIMATED MEAN POPULATION

Year	Year ended 30th June			Year ended 31st December		
	Males	Females	Persons	Males	Females	Persons
1953	315,458	295,733	611,191	320,492	300,542	621,034
1954	325,557	305,148	630,705	330,214	309,749	639,963
1955	333,893	314,329	648,222	338,041	319,282	657,323
1956	342,877	324,021	666,898	346,631	327,828	674,459
1957	349,475	331,474	680,949	352,223	335,225	687,448
1958	354,799	338,769	693,568	357,575	342,340	699,915
1959	360,285	345,584	705,869	362,796	348,941	711,737
1960	365,252	352,064	717,316	368,112	354,788	722,900
1961	371,805	357,965	729,770	375,744	361,642	737,386
1962	379,804	366,001	745,805	384,414	370,845	755,259

SOURCES OF INCREASE

The following table shows the population of the State at each census from 1933 to 1961, and the intercensal gains by natural increase and by migration. The annual rates of total increase for each period are also shown.

POPULATION—ANALYSIS OF INTERCENSAL INCREASE: 1933 TO 1961

Particulars	Intercensal Period (*a*)		
	1933–1947 (14 years)	1947–1954 (7 years)	1954–1961 (7 years)
Population at Beginning of Period	438,852	502,480	639,771
Natural Increase—			
Births	134,871	100,665	118,134
Deaths	(*b*) 65,432	35,089	38,702
Excess of Births over Deaths	(*c*) 69,439	65,576	79,432
Migration—			
Recorded Arrivals	(*d*) 179,995	535,480	635,158
Recorded Departures	(*d*) 196,550	461,857	607,820
Excess of Arrivals over Departures	(*d*) —16,555	73,623	27,338
Total Recorded Increase	52,884	139,199	106,770
Intercensal Adjustment (*e*)	10,744	—1,908	—9,912
Population at End of Period	502,480	639,771	736,629
Increase during Period—			
Total	63,628	137,291	96,858
Per Cent.	14·50	27·32	15·14
Average Annual Rate (per cent.)	0·97	3·51	2·03

(*a*) For Census dates, *see* table on page 118. (*b*) Includes deaths of defence personnel. (*c*) *See* note (*b*). (*d*) Excludes troop movements. Interstate migration has also been excluded for the period July, 1943 to June, 1947. (*e*) Unrecorded movement of population disclosed by the Census.

The population made considerable gains by natural increase during each intercensal period, the rates per thousand of mean population being 10·58 (1933–1947), 16·48 (1947–1954) and 16·40 (1954–1961), compared with rates for Australia as a whole of 9·01, 13·53 and 13·84. Western Australia's rate of increase from this source during each of the periods 1947–1954 and 1954–1961 was greater than that for any other State except Tasmania, which recorded rates of 17·11 and 17·52 per thousand of mean population.

The total increase of Western Australia's population in the period 1933–1947 was 63,628 persons, equivalent to an average annual gain of 0·97 per cent., compared with the Australian average of 0·96 per cent. In the succeeding period Western Australia experienced a higher rate, 3·51 per cent., than any other State and a considerably greater rate of growth than Australia as a whole, 2·46 per cent. per annum. During the period 1954–1961, Western Australia's increase of 2·03 per cent. per annum was lower than that of any other State except New South Wales (1·94 per cent.) and Tasmania (1·82 per cent.). The corresponding rate for Australia as a whole was 2·26 per cent. per annum.

GEOGRAPHICAL DISTRIBUTION

Western Australia is divided into a number of municipal districts for the purposes of local government administration. At the 31st December, 1962 there were 145 such districts, which are used as the basis of presentation of data derived not only from the population census but also from many of the regular statistical collections. Information presented in this way is valuable when considering activities in particular local government areas but is often more detailed than is required for a broader geographical assessment. For this reason, the municipal districts are combined into eleven Statistical Divisions which provide significant areas for the publication of statistics in a convenient summary form. The Statistical Divisions and their component districts are shown on the map of the State appearing at the back of the Year Book.

POPULATION IN STATISTICAL DIVISIONS—1954 AND 1961

Statistical Division	Census, 30th June, 1954				Census, 30th June, 1961			
	Males	Females	Persons	Masculinity (*a*)	Males	Females	Persons	Masculinity (*a*)
Metropolitan	171,832	176,815	348,647	97·18	205,107	215,026	420,133	95·39
Swan	24,370	22,032	46,402	110·61	28,477	26,788	55,265	106·31
South-West	36,607	31,946	68,553	114·59	37,314	34,323	71,637	108·71
Southern Agricultural	19,140	16,985	36,125	112·69	21,999	19,624	41,623	112·10
Central Agricultural	30,502	25,422	55,924	119·98	30,964	26,630	57,594	116·27
Northern Agricultural	17,663	14,405	32,068	122·62	19,578	16,207	35,785	120·80
Eastern Goldfields	18,560	16,018	34,578	115·87	18,430	15,712	34,142	117·30
Central	2,930	1,864	4,794	157·19	2,365	1,594	3,959	148·37
North-West	2,751	1,469	4,220	187·27	2,754	1,809	4,563	152·24
Pilbara	1,795	855	2,650	209·94	2,119	1,124	3,243	188·52
Kimberley	2,303	1,240	3,543	185·73	3,816	1,852	5,668	206·05
Total—All Divisions	328,453	309,051	637,504	106·28	372,923	360,689	733,612	103·39
Migratory (*b*)	1,905	362	2,267	526·24	2,529	488	3,017	518·24
Whole State	330,358	309,413	639,771	106·77	375,452	361,177	736,629	103·95

(*a*) Number of males to each 100 females. (*b*) Comprises persons (both passengers and crew) not enumerated elsewhere who, at midnight on Census night, were on board ships or were travelling on long-distance trains, motor coaches or aircraft.

The growing urbanization occurring in other States is also apparent in Western Australia. The population of the Metropolitan Statistical Division at the Census of the 30th June, 1961 was 420,133, or 57·0 per cent. of the State total, compared with 348,647 (54·5 per cent.) seven years earlier, an increase of 71,486 persons, or 20·5 per cent. The State's natural increase between the Censuses was 79,432 of which the Metropolitan Statistical Division contributed 35,846. In addition, this Division experienced a net gain by migration of 35,640. The larger towns of the Agricultural and South-West Statistical Divisions also showed substantial population increases, the greatest being those of Bunbury (3,317 persons ; or 33·6 per cent.), Geraldton (2,585 ; 31·1 per cent.) and Albany (2,261 ; 27·4 per cent.).

The total population of the non-metropolitan Divisions rose by 24,622 or little more than 8·5 per cent. The natural increase recorded in these Divisions was 43,586, so that there was a loss of 18,964 persons by migration from the area. Of the net increase of 24,622 persons, the Swan Division accounted for more than one-third with a population gain of 8,863, equivalent to 19·1 per cent. The greatest proportional increase, 60·0 per cent., occurred in the Kimberley Division which added 2,125 persons to its population

of 3,543 at the 1954 Census. Other Divisions showing an increase were Southern Agricultural, 5,498 (15·2 per cent.); Northern Agricultural, 3,717 (11·6 per cent.); South-West, 3,084 (4·5 per cent.); Central Agricultural, 1,670 (3·0 per cent.); Pilbara, 593 (22·4 per cent.); and North-West, 343 (8·1 per cent.). Divisions which experienced a decrease in population were Central which lost 835 persons (—17·4 per cent.) and Eastern Goldfields with a decline of 436 (—1·3 per cent.).

Outside the Metropolitan Statistical Division, the largest towns are Kalgoorlie-Boulder (gold mining), Bunbury, Geraldton and Albany (seaports), Collie (coal mining) and Northam (agricultural centre). These towns are included in the following list, which shows the names and the population of all towns which had more than 1,000 inhabitants at the Census. Those designated " N.M." are " non-municipal " towns, which are unincorporated towns having a Census population of 1,000 or more, are situated outside the Metropolitan Statistical Division and for which boundaries have been specially delineated for Census purposes.

PRINCIPAL TOWNS (†)—POPULATION AT CENSUS OF 30th JUNE, 1961

Name	Designation	Population	Name	Designation	Population
PERTH AND SUBURBS (*a*)—			Bunbury	Town	13,186
Perth	City	94,508	Geraldton	Town	10,894
Perth	Shire	84,045	Albany	Town	10,526
Melville	Shire	39,207	Collie	N.M.	7,547
South Perth	City	29,941	Northam	Town	7,200
Nedlands	City	23,218	Narrogin	Town	4,620
Fremantle	City	21,980	Hamilton Hill	N.M.	3,544
Belmont	Shire	20,393	Busselton	N.M.	3,495
Bayswater	Shire	19,296	Katanning	N.M.	3,360
Canning	Shire	17,701	Kwinana New Town	N.M.	3,269
Subiaco	City	16,033	Merredin	N.M.	3,029
Midland	Town	9,256	Manjimup	N.M.	2,978
Claremont	Town	8,601	Kalamunda-Gooseberry Hill	N.M.	2,488
Bassendean	Shire	8,310	Mandurah	N.M.	2,132
Cottesloe	Town	7,827	Norseman	N.M.	2,104
East Fremantle	Town	6,542	Gosnells	N.M.	1,987
Mosman Park	Shire	*5,862	Armadale	N.M.	1,970
Swan-Guildford (part)	Shire	3,548	Harvey	N.M.	1,898
North Fremantle	Town	2,363	Bridgetown	N.M.	1,877
Peppermint Grove	Shire	*1,502	Carnarvon	Town	1,809
			Mount Barker	N.M.	1,632
TOTAL	(*a*)	420,133	Wagin	N.M.	1,608
			York	Town	1,524
			Rockingham	N.M.	1,301
			Broome	N.M.	1,222
KALGOORLIE AND SUBURBS			Pemberton	N.M.	1,201
Kalgoorlie	Town	9,696	Kellerberrin	N.M.	1,191
Kalgoorlie (part)	Shire	6,304	Moora	N.M.	1,145
Boulder	Town	5,773	Esperance	N.M.	1,111
			Wundowie	N.M.	1,102
TOTAL		21,773	Donnybrook	N.M.	1,011

(†) The names and designations used are those which became current on the 1st July, 1961 when the Local Government Act, 1960 came into operation. (*a*) Metropolitan Statistical Division. *Revised.
N.M. denotes " non-municipal " town.

The area described officially as the *South-West Land Division* often has particular importance in matters of legislation and administration. Its boundaries are almost coincident with those of the area formed by the aggregation of the Metropolitan, Swan, South-West, Southern Agricultural, Central Agricultural and Northern Agricultural Statistical Divisions. It embraces an area of 98,305 square miles, a little more than one-tenth of the whole State (975,920 square miles), and had a population of 681,977 persons at the 1961 Census, equivalent to 92·6 per cent. of the State total.

The Eastern Goldfields, Central and Pilbara Statistical Divisions together comprised an area of 636,756 square miles (or almost two-thirds of the State) and had a population of only 41,344 persons at the Census of the 30th June, 1961. A low rainfall renders much of it virtually uninhabitable and desert or near-desert conditions prevail over some 350,000 square miles which includes much of the eastern and northern parts of the area and extends into the southern portion of the Kimberley Statistical Division. Almost no part of this desert area has an annual rainfall greater than ten inches and a considerable proportion has much less. Of the total of 41,344 persons enumerated in the three Divisions at the Census, more than 33,000 were living in or near the towns of Kalgoorlie-Boulder (21,773), Norseman (2,478), Esperance (1,555), Gwalia-Leonora (970), Port Hedland (965), Southern Cross (936), Mount Magnet (908), Wittenoom (881), Bullfinch (774), Coolgardie (687), Meekatharra (640) and Ravensthorpe (509). Little more than 8,000 persons, therefore, were resident in the remainder of the area.

For administrative and other purposes, the portion of the State lying north of the 26th parallel of latitude frequently has special significance. This area, which embraces part of the Central, almost all of the North-West and the whole of the Pilbara and Kimberley Statistical Divisions, is 529,486 square miles in extent. It is therefore somewhat greater in area than half the entire State, but had a population at the 1961 Census of only 13,657 persons. Of these, more than 8,600 were to be found at or near the ports of the north and north-west coasts, and only about 5,000 on the sheep and cattle stations and at mines and developmental projects in the hinterland.

Density—The most densely populated part of the State is the Metropolitan Statistical Division. At the Census of the 30th June, 1961 it had a population of 420,133 and an area of 192 square miles, representing a density of 2,188 persons per square mile. The Central Division is the most sparsely populated with an area of 215,070 square miles (more than one-fifth of the entire State) and a Census population of only 3,959 persons, equivalent to an average of one person to every 54 square miles.

AREA, POPULATION AND DENSITY—STATISTICAL DIVISIONS
CENSUS, 30th JUNE, 1961

Statistical Division	Area		Population				Persons per square mile
	Square Miles	Proportion of State (per cent.)	Males	Females	Persons	Proportion of State (per cent.)	
Metropolitan	192	0·02	205,107	215,026	420,133	57·03	2,188·19
Swan	1,885	0·19	28,477	26,788	55,265	7·50	29·32
South-West	11,025	1·13	37,314	34,323	71,637	9·73	6·50
Southern Agricultural	22,050	2·26	21,999	19,624	41,623	5·65	1·89
Central Agricultural	29,077	2·98	30,964	26,630	57,594	7·82	1·98
Northern Agricultural	36,840	3·77	19,578	16,207	35,785	4·86	0·97
Eastern Goldfields	250,224	25·64	18,430	15,712	34,142	4·63	0·14
Central	215,070	22·04	2,365	1,594	3,959	0·54	0·02
North-West	75,732	7·76	2,754	1,809	4,563	0·62	0·06
Pilbara	171,462	17·57	2,119	1,124	3,243	0·44	0·02
Kimberley	162,363	16·64	3,816	1,852	5,668	0·77	0·03
Total—All Divisions	975,920	100·00	372,923	360,689	733,612	99·59	0·75
Migratory (*a*)			2,529	488	3,017	0·41	
Whole State	975,920	100·00	375,452	361,177	736,629	100·00	0·75

(*a*) Comprises persons (both passengers and crew) not enumerated elsewhere who, at midnight on Census night, were on board ships or were travelling on long-distance trains, motor coaches or aircraft.

Western Australia had a population density at the 1961 Census of only 0·75 persons per square mile, compared with an average of 3·54 for Australia as a whole. Victoria was the most densely populated State, having an average of 33·34 persons per square mile.

The following table shows the area of each of the States and Territories together with the population and its density at the Census of 30th June, 1961.

AREA, POPULATION AND DENSITY—STATES AND TERRITORIES
CENSUS, 30th JUNE, 1961

State or Territory	Area in square miles	Population			Persons per square mile
		Males	Females	Persons	
New South Wales (*a*)	309,433	1,972,909	1,944,104	3,917,013	12·66
Victoria	87,884	1,474,395	1,455,718	2,930,113	33·34
Queensland	667,000	774,579	744,249	1,518,828	2·28
South Australia	380,070	490,225	479,115	969,340	2·55
Western Australia	**975,920**	**375,452**	**361,177**	**736,629**	**0·75**
Tasmania	26,215	177,628	172,712	350,340	13·36
Northern Territory	523,620	16,206	10,889	27,095	0·05
Australian Capital Territory	939	30,858	27,970	58,828	62·65
Australia (*a*)	2,971,081	5,312,252	5,195,934	10,508,186	3·54

(*a*) Population figures revised.

ABORIGINALS

It is provided in section 127 of tbe Commonwealth of Australia Constitution Act that " in reckoning the numbers of the people of the Commonwealth, or of a State or other part of the Commonwealth, aboriginal natives shall not be counted." Commonwealth legal authorities have given an opinion that persons of the half-blood are not " aboriginal natives " within the meaning of the Constitution, and *a fortiori* that persons of less than half aboriginal blood are not aboriginal natives.

The principle followed in classification for census purposes is that persons having a preponderance of aboriginal blood are regarded as full-blood, those of half aboriginal and half European blood as half-caste, while those having aboriginal blood to a degree less than one-half and European blood to a degree greater than one-half are regarded as being of European race. Full-blood Australian aboriginals so defined are thus excluded, by the requirements of the Constitution Act, from the main tabulations relating to the population census. Nevertheless, every endeavour is made in the course of the census enumeration to record all full-blood aboriginals in contact with civilization. The nomadic habits of the natives, even of those in employment, in remote areas make this compilation extremely difficult, and much more so in the case of those living under tribal conditions. At the 1961 Census, 8,121 full-blood aboriginals were enumerated in Western Australia, and of these one-half were in the Kimberley Statistical Division, one-quarter in the Eastern Goldfields and Central Divisions and one-fifth in the Pilbara and North-West Divisions. It is estimated by the Department of Native Welfare that some 2,000 full-blood aboriginals are living " beyond the confines of civilization," so that the total population may reasonably be assumed to be about 10,000.





CITY OF PERTH AND LOWER REACHES OF SWAN RIVER

King's Park at right and Port of Fremantle (Inner Harbour) in background

CHAPTER IV — *continued*

PART 2 - BIRTHS, DEATHS AND MARRIAGES

THE REGISTRATION SYSTEM

Compulsory registration of births, deaths and marriages in Western Australia was originally provided for by legislation of the year 1841. The Statute currently in force is the Registration of Births, Deaths and Marriages Act, 1961 which came into operation on the 1st September, 1963 to coincide with the commencement of the Marriage Act 1961 (Commonwealth). For the administration of the Act, the State is divided into 27 Registry Districts, each having a District Registrar. Returns and duplicates of all registrations, together with the original supporting documents, are sent monthly from the district offices to the Registrar-General at Perth, where a Central Registry Office has been maintained since 1841.

Births are required to be registered within sixty days of the event, and must be notified by the father, the mother or the occupier of the premises where the birth took place. Special provisions and penalties apply to notification and registration after the expiration of the sixty-day period.

In the case of the birth of a child of at least 28 weeks' gestation not born alive, registration is required both as a birth and a death.

Deaths are required to be registered within fourteen days. Notification must be given by the person who disposes of the body or by the occupier of the premises where the death occurred. As in the case of births, special provisions and penalties exist for the late registration of a death.

Marriages are celebrated according to the provisions of the Marriage Act 1961 (Commonwealth) by ministers of religion registered under the Act, or by District Registrars. Ministers are required to lodge a marriage certificate with the District Registrar for registration within fourteen days of the celebration of a marriage. A penalty fee is provided for registrations after fourteen days from the date of marriage.

Statistics of births, deaths and marriages are prepared from the registration documents. These vital statistics are compiled according to date of registration and not date of occurrence, and according to place of usual residence and not place of occurrence.

BIRTHS

Statistics of births in each of the five years 1958 to 1962 in the Metropolitan Statistical Division, the rest of the State, and in Western Australia as a whole are shown in the following table.

BIRTHS

Year	Births (*a*)			Ex-Nuptial Births (*a*)	Multiple Births (*a*)	Stillbirths
	Males	Females	Total			
METROPOLITAN STATISTICAL DIVISION						
1958	4,398	4,157	8,555	400	182	107
1959	4,516	4,290	8,806	426	203	102
1960	4,507	4,173	8,680	418	202	117
1961	4,548	4,237	8,785	471	169	121
1962	4,541	4,342	8,883	482	157	111
REST OF STATE						
1958	4,134	4,042	8,176	454	211	118
1959	4,210	4,095	8,305	478	213	123
1960	4,192	4,054	8,246	503	156	109
1961	4,252	4,041	8,293	488	160	119
1962	4,283	3,898	8,181	523	144	92
WHOLE STATE						
1958	8,532	8,199	16,731	854	393	225
1959	8,726	8,385	17,111	904	416	225
1960	8,699	8,227	16,926	921	358	226
1961	8,800	8,278	17,078	959	329	240
1962	8,824	8,240	17,064	1,005	301	203

(*a*) Figures represent the number of children live-born.

Birth Rates—The crude birth rate in any period may be defined as the number of live births occurring during the period for every thousand of the mean population.

The average annual rates for each five-year period in the fifty years from 1911 to 1960 and the rates for single years from 1953 to 1962, for Western Australia and Australia as a whole, are shown in the following table.

CRUDE BIRTH RATES—WESTERN AUSTRALIA AND AUSTRALIA

Period	Average Annual Rate		Year	Annual Rate	
	Western Australia	Australia		Western Australia	Australia
1911–1915	28·62	27·78	1953	25·54	22·94
1916–1920	24·49	25·35	1954	24·89	22·50
1921–1925	22·85	23·86	1955	25·29	22·57
1926–1930	21·54	20·98	1956	25·08	22·51
1931–1935	18·36	16·94	1957	24·62	22·86
1936–1940	19·16	17·52	1958	23·90	22·60
1941–1945	21·72	20·28	1959	24·04	22·57
1946–1950	25·24	23·39	1960	23·41	22·42
1951–1955	25·37	22·86	1961	23·16	22·85
1956–1960	24·20	22·59	1962	22·59	22·14

In each year of the period under review, Western Australia's crude birth rate has been higher than that of the Commonwealth with the exception of the latter part of the first World War and during the early 1920's.

In Western Australia, the rate showed a marked and almost continuous decrease from the beginning of the century to the depression of thirty years later when the unprecedentedly low rate of 17·64 was recorded in 1934 (*see* Graph—*Rates of Birth, Death and Marriage*). In the years since then a fairly well-sustained improvement was evident until 1952 when the rate reached 25·66, its highest level since 1917. Since 1952 there has been a decline and in 1962 the rate was 22·59, the lowest since 1945.

Gross and Net Reproduction Rates—As a measure of fertility, the crude birth rate has the advantage of simplicity in calculation. The data necessary for its computation are usually readily available from published statistics, and it is therefore useful in comparing the fertility of the populations of States and countries for which no additional data are available. However, it is of limited use, since it does not take into account the important factors of age and sex composition of the population. Gross and net reproduction rates, which do have regard to these factors, are therefore generally to be preferred to the crude birth rate as measures of fertility.

The gross reproduction rate is derived from age-specific fertility rates, which represent the number of female births occurring to women of specified ages per thousand women of those particular ages. It thus takes cognizance of the considerable variations in fertility experienced by women at the successive stages of their child-bearing life. The gross reproduction rate is a measure of the number of female children who would be born, on the average, to every woman assuming that she lives through the whole of the child-bearing period and that the basic fertility rates remain unaltered throughout.

The gross reproduction rate assumes that all females survive to the end of their child-bearing capacity. A more accurate measure, which takes into account the effect of mortality among women during this period is the net reproduction rate. This rate represents the average number of female children who would be born to women during their lifetime if they were subject in each succeeding year of life to the fertility and mortality rates on which the calculation is based. The net reproduction rate is a measure of the number of women who, in the next generation, will replace the women of reproductive age in the current generation. It provides a useful indication of likely future population trends. A rate remaining stationary at unity indicates an ultimately static population. If a rate greater than unity is maintained, an ultimate increase of population will result, while a continuing rate less than unity will lead to an ultimate decline.

The gross reproduction rates for Western Australia and the Commonwealth in 1961, the latest Census year for which particulars are available, were 1·780 and 1·724, and the corresponding net rates 1·712 and 1·658.

The following table shows the age-specific fertility rates, in terms of female births only, the gross reproduction rates and the net reproduction rates for Western Australia and Australia in each of the Census years 1947, 1954 and 1961.

FERTILITY RATES AND REPRODUCTION RATES
WESTERN AUSTRALIA AND AUSTRALIA

Rate	Western Australia			Australia		
	1947	1954	1961	1947	1954	1961
Age-Specific Fertility Rates (*a*) Age Group (years)						
15–19	16·87	20·58	22·82	15·36	19·12	22·87
20–24	89·45	116·12	119·85	80·68	96·24	110·01
25–29	99·75	106·22	109·40	90·08	94·49	107·73
30–34	72·12	65·07	63·18	63·76	59·91	63·62
35–39	42·87	34·72	30·13	36·48	31·17	30·53
40–44	14·44	11·02	9·96	11·44	9·85	9·36
45–49	1·17	0·76	0·68	0·80	0·71	0·70
Gross Reproduction Rate	1·683	1·772	1·780	1·493	1·558	1·724
Net Reproduction Rate	(*b*) 1·595	(*c*) 1·704	(*c*) 1·712	(*b*) 1·416	(*c*) 1·497	(*c*) 1·658

(*a*) Number of female births per 1,000 women in each age group. (*b*) Based on 1946–1948 mortality experience.
(*c*) Based on 1953–1955 mortality experience.

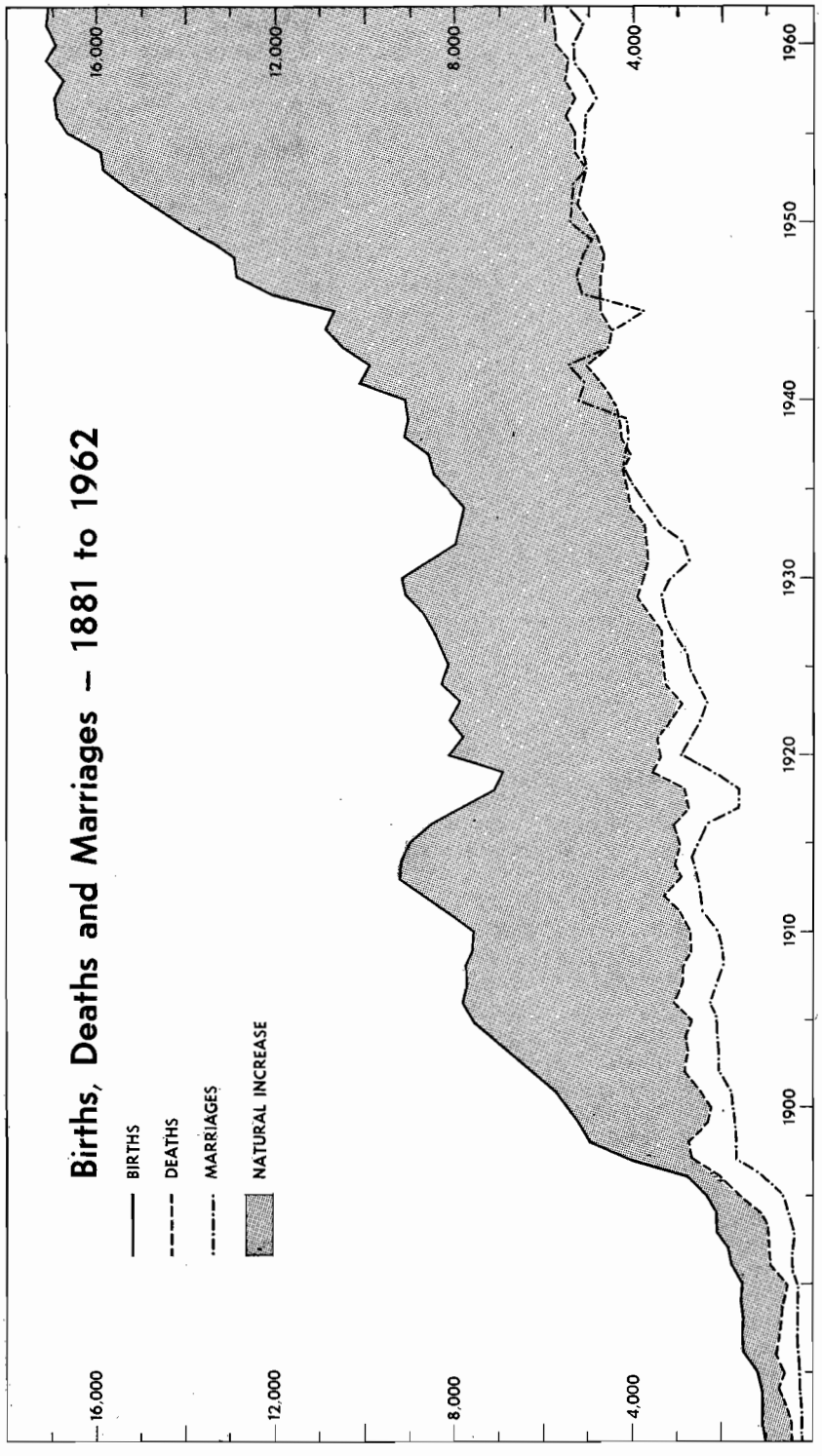
DEATHS

Statistics of deaths in each of the five years 1958 to 1962 in the Metropolitan Statistical Division, the rest of the State, and in Western Australia as a whole appear in the next table. Infant deaths (those which occur in the first year of life) are also shown.

DEATHS

Year	Deaths (*a*)			Infant Deaths (*b*)		
	Males	Females	Total	Males	Females	Total
METROPOLITAN STATISTICAL DIVISION						
1958	1,939	1,538	3,477	94	74	168
1959	1,972	1,539	3,511	86	75	161
1960	2,026	1,587	3,613	87	82	169
1961	2,043	1,687	3,730	82	63	145
1962	2,157	1,675	3,832	106	73	179
REST OF STATE						
1958	1,331	746	2,077	103	89	192
1959	1,268	718	1,986	109	75	184
1960	1,327	757	2,084	107	90	197
1961	1,283	716	1,999	101	90	191
1962	1,240	738	1,978	120	81	201
WHOLE STATE						
1958	3,270	2,284	5,554	197	163	360
1959	3,240	2,257	5,497	195	150	345
1960	3,353	2,344	5,697	194	172	366
1961	3,326	2,403	5,729	183	153	336
1962	3,397	2,413	5,810	226	154	380

(*a*) Including Infant Deaths. (*b*) Deaths occurring in the first year of life.


Births, Deaths and Marriages – 1881 to 1962
BIRTHS
DEATHS
MARRIAGES
NATURAL INCREASE
16,000
12,000
8,000
4,000
1900
1910
1920
1930
1940
1950
1960

Death Rates—The crude death rate is perhaps the most common measure of mortality, and is derived by relating the deaths occurring in a period to the mean population for that period. It is usually expressed as number of deaths per thousand of mean population.

The rates for Western Australia and for the Commonwealth in the period 1911 to 1962 are compared in the following table.

CRUDE DEATH RATES—WESTERN AUSTRALIA AND AUSTRALIA

Period	Average Annual Rate		Year	Annual Rate	
	Western Australia	Australia		Western Australia	Australia
1911–1915	9·86	10·73	1953	8·17	9·09
1916–1920	9·93	10·78	1954	8·38	9·10
1921–1925	9·17	9·52	1955	8·18	8·92
1926–1930	8·91	9·26	1956	8·26	9·13
1931–1935	8·83	9·00	1957	7·71	8·81
1936–1940 (*a*)	9·22	9·63	1958	7·94	8·50
1941–1945 (*a*)	9·86	9·96	1959	7·72	8·87
1946–1950 (*a*)	9·23	9·74	1960	7·88	8·61
1951–1955	8·49	9·25	1961	7·77	8·47
1956–1960	7·90	8·78	1962	7·69	8·70

(*a*) Excludes deaths of members of defence forces from September, 1939 to June, 1947.

In the early years of the century, the Western Australian rate was higher than that for Australia as a whole, but fell below the Australian average in 1909. Since that time, the rate for Western Australia has, with very few exceptions, remained lower than that for the Commonwealth.

Western Australia's crude death rate for the year 1902 was 13·79 per thousand of the mean population but by 1931 it had fallen to 8·51 (*see* Graph—*Rates of Birth, Death and Marriage*). After that year, the rate increased until it reached 10·65 in 1942. Since then there has been a general decline and in 1962 it fell to 7·69, the lowest level ever recorded in Western Australia.

Infant Mortality Rates—The infant mortality rate expresses the relationship between deaths of infants and the live births occurring in a period, and is stated in terms of number of deaths under one year of age per thousand live births.

The rates for Western Australia and for the Commonwealth in the period 1911 to 1962 are shown in the following table.

INFANT MORTALITY RATES—WESTERN AUSTRALIA AND AUSTRALIA

Period	Average Annual Rate		Year	Annual Rate	
	Western Australia	Australia		Western Australia	Australia
1911–1915	72·43	70·32	1953	23·83	23·30
1916–1920	61·73	64·67	1954	22·54	22·48
1921–1925	59·14	57·88	1955	22·44	22·01
1926–1930	49·27	51·99	1956	22·70	21·72
1931–1935	40·81	41·27	1957	21·09	21·41
1936–1940	39·70	38·81	1058	21·52	20·49
1941–1945	33·30	34·97	1959	20·16	21·54
1946–1950	28·15	26·98	1960	21·62	20·16
1951–1955	24·41	23·34	1961	19·67	19·54
1956–1960	21·42	21·05	1962	22·27	20·41

In the first decade of the century, the average annual rate (106·07) in Western Australia was considerably above the Commonwealth average of 86·83, and was the highest among the Australian States. Since then both the Western Australian and the Australian rates have shown a remarkable decrease. Despite the improvement in Western Australia, the experience of recent years reveals a less favourable situation than for the Commonwealth as a whole. In the five years ended 1962, Western Australia's average annual rate was 21·05 compared with the Australian rate of 20·42 and was greater than that for any other State except New South Wales, 21·45.

Causes of Infant Deaths—The causes of death in the first year of life, in certain broad groups, during the period 1901 to 1962 are set out in the following table. Changes in description and in method of classification make such a comparison somewhat difficult, but it is thought that the figures give a reasonably reliable indication of trends within the various groups.

INFANT DEATHS†—NUMBERS AND RATES (*a*)

Year	Cause of Death											
	Diseases of Early Infancy (*b*)		Congenital Malformation		Diseases of Digestive System		Infective and Parasitic Diseases		All Other Causes		Total	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
1901	249	43·55	6	1·05	277	48·44	51	8·92	154	26·93	737	128·89
1911	222	27·43	19	2·35	213	26·34	30	3·71	131	16·19	615	76·01
1921	195	24·98	28	3·59	197	25·23	(*c*)	(*c*)	(*c*)191	(*c*)24·46	611	78·26
1931	179	20·94	37	4·33	40	4·68	25	2·92	74	8·66	355	41·53
1941	180	17·79	43	4·25	54	5·34	9	0·89	71	7·02	357	35·28
1951	264	17·85	61	4·12	25	1·69	9	0·61	66	4·46	425	28·73
1961	177	10·36	55	3·22	27	1·58	10	0·59	67	3·92	336	19·67
1958	201	12·01	63	3·77	24	1·43	6	0·36	66	3·94	360	21·52
1959	194	11·34	53	3·10	17	0·99	14	0·82	67	3·92	345	20·16
1960	218	12·88	63	3·72	13	0·77	10	0·59	62	3·66	366	21·62
1961	177	10·36	55	3·22	27	1·58	10	0·59	67	3·92	336	19·67
1962	200	11·72	72	4·22	29	1·70	12	0·70	67	3·93	380	22·27

† Excluding stillbirths. (*a*) Rate per 1,000 live births. (*b*) Including premature births. (*c*) "Infective and Parasitic Diseases" included in "All Other Causes."

The greatest decrease has taken place in the group "Diseases of the Digestive System." The principal cause of death in this group is diarrhoea and enteritis, which in 1901 accounted for 223 of the 737 deaths under one year of age. This represented a mortality rate from this cause alone of 39·00 per thousand live births. The corresponding rate for 1962, when there were 22 infant deaths from diarrhoea and enteritis, was 1·29.

Stillbirths—The infant mortality rate discussed above is that most commonly used, and takes no account of stillbirths. It is informative, however, to examine these two factors in relation, as in the next table. The importance of stillbirths is evident from the fact that, in the period 1953 to 1962, the average annual number of stillbirths registered was 237, compared with an average of 364 deaths in the first year of life.

STILLBIRTHS AND INFANT DEATHS

Year	Stillbirths				Deaths under One Year of Age			
	Males	Females	Total	Masculinity (*a*)	Males	Females	Total	Masculinity (*a*)
1953	146	122	268	119·7	218	160	378	136·3
1954	145	125	270	116·0	225	134	359	167·9
1955	126	113	239	111·5	217	156	373	139·1
1956	113	113	226	100·0	211	173	384	122·0
1957	135	113	248	119·5	213	144	357	147·9
1958	136	89	225	152·8	197	163	360	120·9
1959	127	98	225	129·6	195	150	345	130·0
1960	121	105	226	115·2	194	172	366	112·8
1961	137	103	240	133·0	183	153	336	119·6
1962	108	95	203	113·7	226	154	380	146·8

(*a*) Number of males to each 100 females.

The relationship between stillbirths and infant deaths during the same period is further examined in the following table, which shows the numbers of stillbirths and of infant deaths at various ages. The rates shown represent the number of stillbirths, or of infant deaths, per thousand of total births (*i.e.*, including stillbirths).

STILLBIRTHS AND INFANT DEATHS—NUMBERS AND RATES

Year	Stillbirths	Infant Deaths			Stillbirths and Infant Deaths
		Under One Week	Under One Month	Under One Year	
		NUMBER			
1953	268	216	261	378	646
1954	270	230	256	359	629
1955	239	224	266	373	612
1956	226	223	269	384	610
1957	248	233	256	357	605
1958	225	217	240	360	585
1959	225	214	234	345	570
1960	226	239	269	366	592
1961	240	179	218	336	576
1962	203	218	247	380	583
		RATE (*a*)			
1953	16·62	13·39	16·18	23·43	40·05
1954	16·67	14·20	15·80	22·16	38·83
1955	14·17	13·28	15·78	22·12	36·29
1956	13·18	13·01	15·69	22·40	35·59
1957	14·44	13·57	14·91	20·79	35·23
1958	13·27	12·80	14·15	21·23	34·50
1959	12·98	12·34	13·50	19·90	32·88
1960	13·18	13·93	15·68	21·34	34·51
1961	13·86	10·34	12·59	19·40	33·26
1962	11·76	12·63	14·30	22·01	33·76

(*a*) Rate per 1,000 of total births (*i.e.*, including stillbirths).

Of the 6,008 failures during the ten years to complete the first year of life, due either to stillbirth or to death in the first year, 2,370 or 39·45 per cent. were attributable to stillbirth.

Standardized Death Rates—The crude death rate, as noted earlier, expresses simply the number of deaths occurring in a population during any period as a proportion of the mean population for that period. Although this rate is useful as a measure of the absolute level of mortality, its value is necessarily restricted when comparing the mortality in different communities in the same period, or in one community at different times.

The effect on the crude death rate of the presence in a community of a high proportion of young people or of aged people, or of a high or low masculinity, will be readily appreciated. To devise an adequate measure of comparative mortality, it is therefore necessary to select a " standard " population to which the varying mortality experiences may be referred. A standard population compiled by the International Statistical Institute, based upon the age and sex distribution of the population of 19 European countries at their censuses nearest to the year 1900, has been used as the basis of the standardized death rates for Western Australia and Australia quoted in the following paragraph. The rate is computed by applying to each sex and age group in the standard population, the death rates actually recorded in the corresponding groups of the State and Australian populations. The sum of these results represents the number of deaths which would have occurred in the standard population if it had been exposed to the same risks of mortality. The standardized death rate is derived by expressing this number in terms of " per thousand of the standard population."

For the Census years 1921, 1933, 1947, 1954 and 1961 the standardized death rates for Western Australia were 11·88, 8·74, 7·28, 6·71 and 6·02, and the corresponding rates for Australia as a whole were 10·58, 8·62, 7·34, 6·90 and 6·27.

Causes of Death—Statistics of causes of death provide important numerical facts by which to evaluate the varying health conditions and needs of different countries. In order to enable valid international comparisons, it is necessary that each country present its statistics of causes of death in a uniform manner. The first Classification of Causes of Death to be adopted internationally was that compiled by Dr. J. Bertillon at the request of the International Statistical Institute meeting in Vienna in 1891. Subsequently this Classification was periodically revised by the Institute in collaboration with the League of Nations Health Organization. The current revision, the seventh to be made, was carried out by a Committee of the World Health Organization.

The following table shows the number of deaths in Western Australia during each year from 1958 to 1962 classified according to cause, together with the corresponding rates per thousand of mean population.

DEATHS CLASSIFIED ACCORDING TO PRINCIPAL CAUSES—NUMBERS AND RATES (*a*)

Cause of Death	1958	1959	1960	1961	1962
	NUMBER				
Diseases of the heart	1,968	1,908	1,996	2,022	2,078
Cancer	880	911	907	931	923
Cerebral haemorrhage, etc.	691	614	651	662	659
Automobile accidents	191	173	205	193	175
Other accidents	171	169	194	195	211
Pneumonia	204	211	209	237	224
General arteriosclerosis	126	144	192	177	221
Enteritis and diarrhoea	40	37	21	50	48
Other diseases of digestive system	169	126	146	140	138
Nephritis	64	62	48	52	41
Other diseases of genito-urinary system	81	92	78	87	72
Suicide	103	86	92	85	108
Homicide	6	13	10	11	7
Bronchitis	74	79	85	94	104
Diabetes mellitus	57	48	60	63	54
Tuberculosis	27	24	30	19	29
Maternal causes	8	5	8	7	5
All other causes	694	795	765	704	713
All Causes	5,554	5,497	5,697	5,729	5,810
	RATE (*a*)				
Diseases of the heart	2·81	2·68	2·76	2·74	2·76
Cancer	1·26	1·28	1·25	1·26	1·22
Cerebral haemorrhage, etc.	0·99	0·86	0·90	0·90	0·87
Automobile accidents	0·27	0·24	0·28	0·26	0·23
Other accidents	0·24	0·24	0·27	0·26	0·28
Pneumonia	0·29	0·30	0·29	0·32	0·30
General arteriosclerosis	0·18	0·20	0·27	0·24	0·29
Enteritis and diarrhoea	0·06	0·05	0·03	0·07	0·06
Other diseases of digestive system	0·24	0·18	0·20	0·19	0·18
Nephritis	0·09	0·09	0·07	0·07	0·05
Other diseases of genito-urinary system	0·12	0·13	0·11	0·12	0·10
Suicide	0·15	0·12	0·13	0·12	0·14
Homicide	0·01	0·02	0·01	0·01	0·01
Bronchitis	0·11	0·11	0·12	0·13	0·14
Diabetes mellitus	0·08	0·07	0·08	0·09	0·07
Tuberculosis	0·04	0·03	0·04	0·03	0·04
Maternal causes	0·01	0·01	0·01	0·01	0·01
All other causes	0·99	1·11	1·06	0·95	0·94
All Causes	7·94	7·72	7·88	7·77	7·69

(*a*) Rate per thousand of mean population.

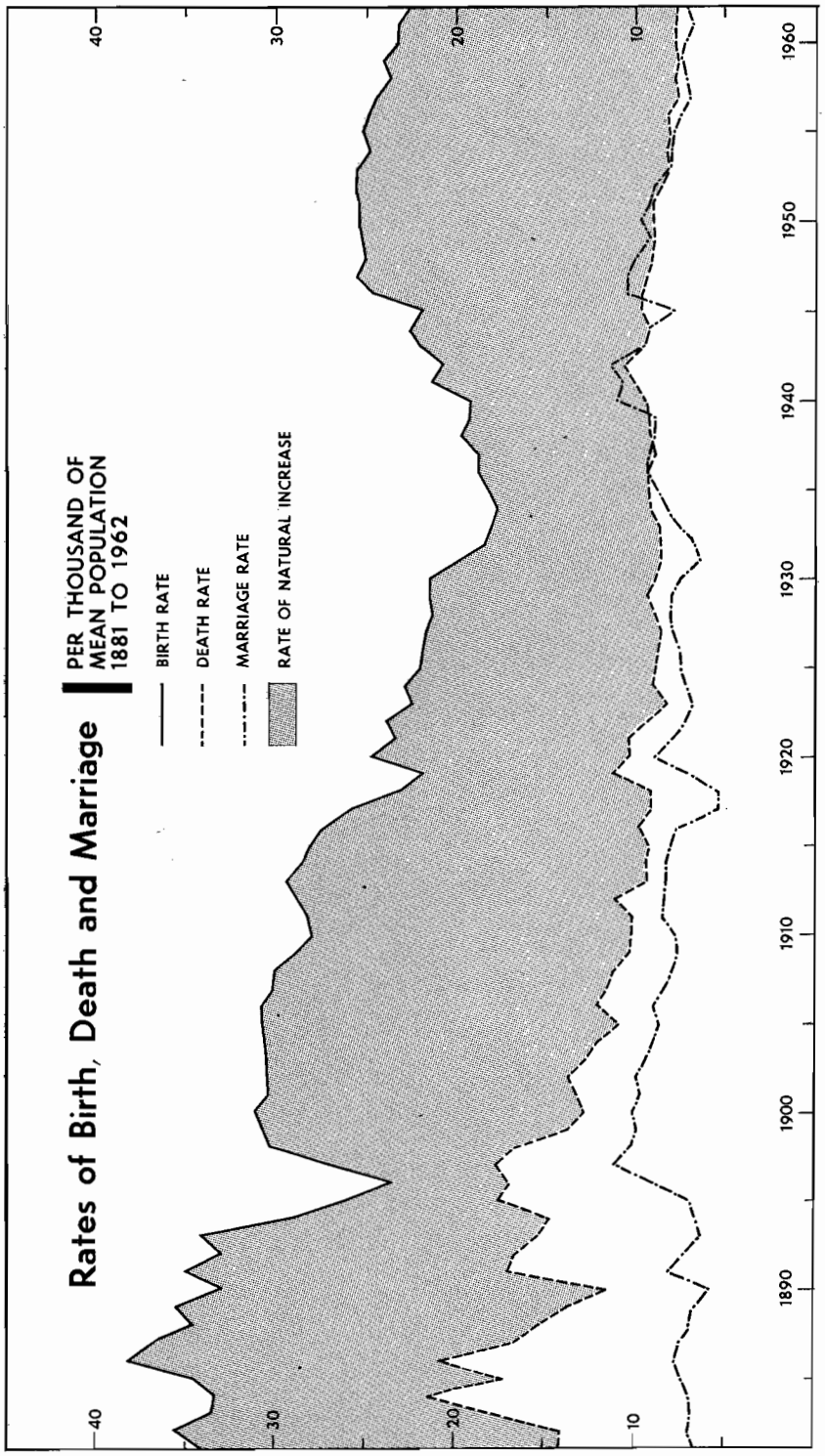
Expectation of Life—The Australian Life Tables, prepared on the basis of the results of the national population census, form a comprehensive series covering the experience of seven separate periods, 1881–1890, 1891–1900, 1901–1910, 1920–1922, 1932–1934, 1946–1948 and 1953–1955. The expectation of life of males and females at various ages as revealed by these investigations is shown in the following table.

It will be seen that there has been a substantial and consistent increase in the expectation of life of both the Australian male and the Australian female. Thus, while males, according to the experience of the period 1881–1890, had at birth an average expectancy of 47·20 years of life, the latest investigation shows that the expectancy has risen to 67·14 years. The anticipated life-span of females at birth has increased from 50·84 years to 72·75 years in the same period. This greater expectation of life of females than of males applies, with very few exceptions, at each age and in each period covered by the table.

EXPECTATION OF LIFE—AUSTRALIA, 1881–1890 TO 1953–1955

(Years)

Age last birthday (years)	1881–1890	1891–1900	1901–1910	1920–1922	1932–1934	1946–1948	1953–1955
				MALES			
0	47·20	51·08	55·20	59·15	63·48	66·07	67·14
1	53·34	56·88	59·96	62·67	65·49	67·25	67·86
2	54·26	57·41	60·04	62·60	65·00	66·47	67·05
3	54·01	56·98	59·45	61·99	64·25	65·60	66·17
4	53·49	56·33	58·71	61·25	63·43	64·70	65·26
5	52·86	55·61	57·91	60·43	62·57	63·77	64·32
10	48·86	51·43	53·53	56·01	58·02	59·04	59·53
15	44·45	46·98	49·03	51·44	53·36	54·28	54·72
20	40·58	42·81	44·74	46·99	48·81	49·64	50·10
25	37·10	38·90	40·60	42·70	44·37	45·04	45·54
30	33·64	35·11	36·52	38·44	39·90	40·40	40·90
35	30·06	31·34	32·49	34·20	35·46	35·79	36·25
40	26·50	27·65	28·56	30·05	31·11	31·23	31·65
45	23·04	23·99	24·78	26·03	26·87	26·83	27·18
50	19·74	20·45	21·16	22·20	22·83	22·67	22·92
55	16·65	17·08	17·67	18·51	19·03	18·84	19·00
60	13·77	13·99	14·35	15·08	15·57	15·36	15·47
65	11·06	11·25	11·31	12·01	12·40	12·25	12·33
70	8·82	8·90	8·67	9·26	9·60	9·55	9·59
75	6·72	6·70	6·58	6·87	7·19	7·23	7·33
80	5·11	5·00	4·96	5·00	5·22	5·36	5·47
85	3·86	3·79	3·65	3·62	3·90	3·84	4·01
90	2·91	2·91	2·64	2·60	2·99	2·74	2·93
95	2·16	2·16	1·88	1·86	2·11	1·93	2·10
100	1·32	1·29	1·18	1·17	1·10		
				FEMALES			
0	50·84	54·76	58·84	63·31	67·14	70·63	72·75
1	56·44	59·89	62·89	66·03	68·67	71·45	73·22
2	57·39	60·40	62·95	65·86	68·12	70·66	72·40
3	57·16	59·98	62·34	65·21	67·34	69·77	71·49
4	56·63	59·35	61·60	64·44	66·50	68·84	70·55
5	56·00	58·64	60·80	63·64	65·64	67·91	69·61
10	51·95	54·46	56·39	59·20	61·02	63·11	64·78
15	47·54	49·97	51·86	54·55	56·29	58·27	59·90
20	43·43	45·72	47·52	50·03	51·67	53·47	55·06
25	39·67	41·69	43·36	45·71	47·19	48·74	50·24
30	36·13	37·86	39·33	41·48	42·77	44·08	45·43
35	32·58	34·14	35·37	37·28	38·37	39·46	40·67
40	29·08	30·49	31·47	33·14	34·04	34·91	36·00
45	25·56	26·69	27·59	28·99	29·74	30·45	31·44
50	22·06	22·93	23·69	24·90	25·58	26·14	27·03
55	18·64	19·29	19·85	20·95	21·58	22·04	22·81
60	15·39	15·86	16·20	17·17	17·74	18·11	18·78
65	12·27	12·75	12·88	13·60	14·15	14·44	15·02
70	9·70	9·89	9·96	10·41	10·98	11·14	11·62
75	7·24	7·37	7·59	7·73	8·23	8·32	8·69
80	5·27	5·49	5·73	5·61	6·01	6·02	6·30
85	3·90	4·12	4·19	4·06	4·30	4·32	4·52
90	2·98	3·07	2·99	2·91	3·05	3·08	3·24
95	2·25	2·18	2·10	2·07	2·00	2·14	2·31
100	1·37	1·23	1·24	1·24	1·02		


Rates of Birth, Death and Marriage
PER THOUSAND OF MEAN POPULATION 1881 TO 1962
BIRTH RATE
DEATH RATE
MARRIAGE RATE
RATE OF NATURAL INCREASE
40
30
20
10
1890
1900
1910
1920
1930
1940
1950
1960

MARRIAGES

The number of marriages celebrated in Western Australia in each of the five years 1958 to 1962 is shown in the following table. Marriages celebrated by ministers of religion are distinguished from those celebrated by District Registrars, and the numbers of minors marrying are also shown.

MARRIAGES

Year	Marriages Celebrated by		All Marriages	Proportion Celebrated by Registrars (per cent.)	Number of Minors Married		
	Ministers	Registrars			Males	Females	Persons
METROPOLITAN STATISTICAL DIVISION							
1958	2,544	483	3,027	16·0	276	1,053	1,329
1959	2,673	533	3,206	16·6	275	1,142	1,417
1960	2,695	478	3,173	15·1	290	1,154	1,444
1961	2,556	452	3,008	15·0	282	1,127	1,409
1962	2,688	525	3,213	16·3	345	1,215	1,560
REST OF STATE							
1958	1,705	306	2,011	15·2	181	899	1,080
1959	1,856	325	2,181	14·9	201	954	1,155
1960	1,849	301	2,150	14·0	213	974	1,187
1961	1,831	311	2,142	14·5	216	962	1,178
1962	1,963	290	2,253	12·9	237	992	1,229
WHOLE STATE							
1958	4,249	789	5,038	15·7	457	1,952	2,409
1959	4,529	858	5,387	15·9	476	2,096	2,572
1960	4,544	779	5,323	14·6	503	2,128	2,631
1961	4,387	763	5,150	14·8	498	2,089	2,587
1962	4,651	815	5,466	14·9	582	2,207	2,789

The statistics of minors marrying during the five-year period as shown above reveal that 39·72 per cent. of brides were minors, compared with only 9·54 per cent. of bridegrooms.

Marriage Rates—The average annual marriage rates per thousand of mean population for Western Australia and for the Commonwealth in each five-year period from 1911 to 1960, as well as the rates for each of the years from 1953 to 1962, are shown in the following table.

MARRIAGE RATES—WESTERN AUSTRALIA AND AUSTRALIA

Period	Average Annual Rate		Year	Annual Rate	
	Western Australia	Australia		Western Australia	Australia
1911–1915	8·26	8·86	1953	8·10	8·01
1916–1920	6·80	7·82	1954	8·13	7·92
1921–1925	7·27	8·04	1955	7·83	7·84
1926–1930	7·80	7·52	1956	7·53	7·62
1931–1935	7·58	7·16	1957	7·12	7·65
1936–1940	9·49	9·35	1958	7·20	7·52
1941–1945	9·74	9·94	1959	7·57	7·40
1946–1950	10·01	9·77	1960	7·36	7·34
1951–1955	8·44	8·29	1961	6·98	7·30
1956–1960	7·36	7·50	1962	7·24	7·39

CHAPTER V – SOCIAL CONDITION

PART I – EDUCATION

PRIMARY AND SECONDARY EDUCATION

The Blue Books of the Colony of Western Australia indicate that some form of education was available from the earliest years of settlement but it was not until 1847 that an authority for the control of public schools was appointed. This body, the General Board of Education, was empowered to charge fees but provision was made for an adjustment in accordance with the parents' ability to pay. There was thus a measure of assistance in education but school attendance was not compulsory.

The first Elementary Education Act was passed in 1871 and established a Central Board of Education. The Act provided for payment by the Government of grants-in-aid to non-government elementary schools, and designated as " assisted " schools those to which grants were made. The Central Board was " to exercise a general supervision over all schools receiving Government aid in secular instruction only, and a more special direction over purely Government schools." It was also the function of the Central Board to apportion and distribute funds provided for educational purposes by the Legislature and to fix a scale of fees for attendance at government schools which, however, were not to be charged in cases of hardship. District Boards were established to inspect and supervise both government and " assisted " schools in their areas and to report periodically to the Central Board. Compulsory schooling was prescribed for all children aged more than six but less than fourteen years who lived within three miles of a school.

The Elementary Education Act Amendment Act, 1893 abolished the Central Board of Education and vested control in a Minister of Education. In 1895 grants-in-aid to " assisted " schools were discontinued under the provisions of the Assisted Schools Abolition Act. These measures were the forerunners of the Public Education Act, 1899. By this Act the payment of fees was abolished for children of the ages to which the terms of compulsory attendance applied. The Elementary Education Act of 1871, with its amendments, and the Public Education Act of 1899 as amended were repealed by the Education Act of 1928 which, with the incorporation of later amendments, is the Statute now in force for the administration and control of education in Western Australia.

School Attendance

Where a child lives within reasonable access of a government or approved non-government school, attendance is compulsory from the age of six years and upward to the end of the school year in which the child attains the age of fourteen years, unless satisfactory instruction is provided elsewhere. The Education Act contains a provision that the leaving age may be extended by proclamation up to the age of fifteen years.

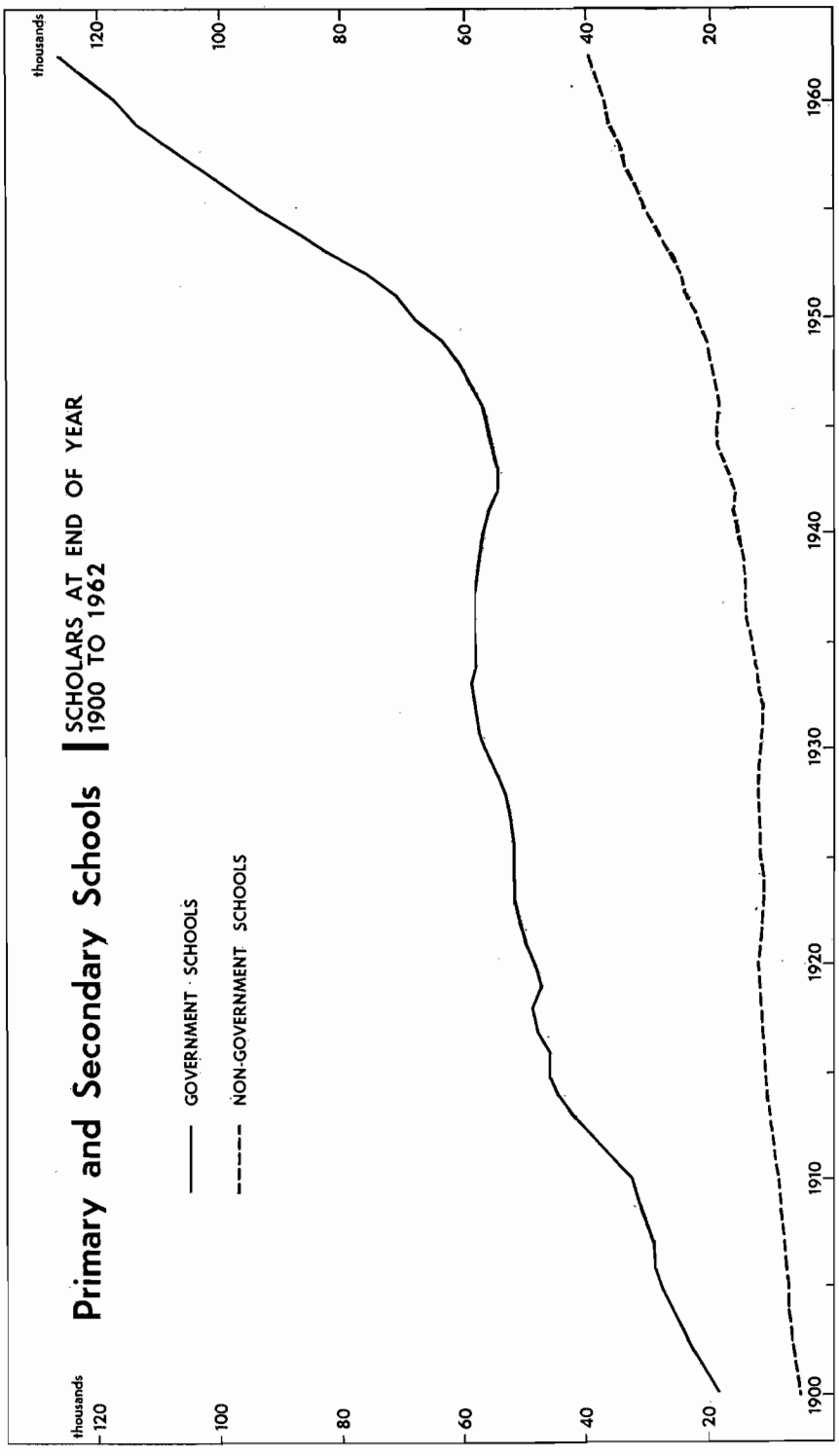
SCHOOL CHILDREN CLASSIFIED ACCORDING TO AGE—AUGUST, 1962

Age last birthday (years)	Children Attending—						Total		
	Government Schools (*a*)			Non-government Schools (*b*)					
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Under 6	2,839	2,661	5,500	3,471	3,338	6,809	6,310	5,999	12,309
6 and under 14	54,031	50,041	104,072	11,961	13,311	25,272	65,992	63,352	129,344
14 and under 16	8,895	7,334	16,229	2,820	2,937	5,757	11,715	10,271	21,986
16 and over	2,386	1,268	3,654	1,280	979	2,259	3,666	2,247	5,913
Total	68,151	61,304	129,455	19,532	20,565	40,097	87,683	81,869	169,552

(*a*) Excluding Technical Schools and Colleges. (*b*) Including kindergartens.

THE EDUCATION DEPARTMENT

The Education Department is responsible for the organization and management of the State Government's education programme and is controlled by a Director-General of Education responsible to the Minister for Education. The administrative structure of the Department provides for five Divisions and a number of Special Branches. The Divisions, each of which is in the charge of a Director, are


Primary and Secondary Schools
SCHOLARS AT END OF YEAR
1900 TO 1962
GOVERNMENT SCHOOLS
NON-GOVERNMENT SCHOOLS
thousands
120
100
80
60
40
20
1900
1910
1920
1930
1940
1950
1960

those of Primary Education, Secondary Education, Technical Education, Teacher Training and Special Services (including library services). The work of the Special Branches is related to such activities as physical education (including swimming instruction), music, drama, art and crafts, visual education and publications. In addition there is provision for a number of other services which are concerned with particular aspects of the education and welfare of school children, such as the Nature Advisory Service, and the Schools Medical and Dental Services conducted in collaboration with the Public Health Department.

Primary and Secondary Schools

Instruction in the primary school is given in seven grades. A child who makes normal progress completes the course at the age of 12 years and may then enter high school. A Senior High School provides tuition to standards required for the Junior Certificate examination, usually taken at the age of 15 years, and the Leaving Certificate examination, which is the final examination in Western Australian secondary schools and is normally taken at the age of 17 years. A pass in certain specified subjects qualifies a candidate to matriculate at the University. A High School gives instruction in the first three years of the secondary school curriculum leading to the Junior Certificate examination. A Junior High School is one which provides primary and post-primary education to Junior Certificate level. At some centres where there is no high school, post-primary subjects are taught at the primary school.

Children who do not enter for the Junior Certificate examination may elect to sit for a High School Certificate examination, which is also taken at about the age of 15 years.

The following table shows the number of schools in each category, the number of teachers employed in primary and secondary education and the number of scholars classified according to grade of education, for each of the years 1958 to 1962. The figures shown under the heading of Special Duties represent teachers engaged in activities associated with the Division of Special Services and the Special Branches of the Department.

GOVERNMENT SCHOOLS (*a*)

Particulars	1958	1959	1960	1961	1962
NUMBER OF SCHOOLS					
Primary Schools	447	456	459	460	461
Junior High Schools	31	29	35	36	32
High Schools	12	14	13	14	22
Senior High Schools	13	13	14	16	17
Total	503	512	521	526	532
NUMBER OF TEACHERS (*b*)					
Engaged in Teaching Duties	3,514	3,709	3,950	4,117	4,277
On Special Duties	79	77	77	92	66
Total	3,593	3,786	4,027	4,209	4,343
Males	1,869	1,980	2,187	2,297	2,377
Females	1,724	1,806	1,840	1,912	1,966
Total	3,593	3,786	4,027	4,209	4,343
NUMBER OF SCHOLARS					
Grade of Education—					
Primary	88,948	91,405	92,236	94,160	96,237
Secondary : Years 1, 2 and 3	20,387	22,330	25,034	27,795	30,103
Years 4 and 5	1,791	2,117	2,518	2,677	3,115
Total	111,126	115,852	119,788	124,632	129,455
Males	58,181	60,600	62,654	65,309	68,151
Females	52,945	55,252	57,134	59,323	61,304
Total	111,126	115,852	119,788	124,632	129,455

(*a*) For 1958 and 1959, the numbers of schools and teachers are as at the end of the school year, and the numbers of scholars are as at 1st August. From 1960, all figures are as at 1st August. (*b*) Excluding persons teaching part-time.

The Education Department's policy of " consolidating " its schools in country areas has tended to concentrate teaching in the larger towns. Pupils are taken to and from school by motor bus at government expense and it has been possible by this means to close a number of small rural schools, so enabling teaching staff to be used more effectively in the better-equipped consolidated schools.

Primary and Secondary Curriculum

In primary schools the subjects taught are English, arithmetic, social studies, elementary science, physical education, handicrafts, music and art. Handicrafts in the primary schools consist of needlework for girls and such crafts as leatherwork, bookbinding, papiermache work and canework for boys. At the post-primary levels, mathematics, languages, science subjects, economics, home science, woodwork, metalwork and technical drawing are introduced. The teaching of elementary science aims at a better understanding of the child's physical environment. The course is adapted to the conditions of the particular neighbourhood, and so varies between town and country areas. In musical expression, choral singing receives most attention, although school orchestras are being developed in some primary and high schools. Advisory teachers, under the direction of specialist superintendents, assist teachers in the fields of handicrafts, physical education, art, music, speech, drama and elementary science.

Education in the government schools is secular in character but periods are set aside during which representatives of various religious denominations attend to give religious instruction. In addition, instruction in scripture stories is given by class teachers.

The general curriculum differs slightly between urban and rural areas, an example being the teaching of elementary agricultural science in country schools. It is nevertheless sufficiently consistent to ensure a uniform standard of education throughout the State.

Radio and Film Aids

Extensive use is made of radio and films, most schools having radio receivers and many being equipped also with film projectors and sound-reproduction systems. The Australian Broadcasting Commission co-operates with the Education Department in devising suitable radio programmes and Parents and Citizens' Associations assist in providing the necessary equipment. The Visual Education Branch of the Department maintains an extensive film library.

Student Counselling and Vocational Guidance

Guidance officers of the Division of Special Services are available to discuss with parents the most suitable courses of study for their children and vocational guidance is given to pupils leaving high school. In addition, cases of handicapped or educationally retarded children are investigated and appropriate courses of education recommended.

Government Scholarships and Bursaries

The Education Department each year awards 100 scholarships for assistance in secondary education. At the end of the primary school course, fifty scholarships valued at £30 per annum are awarded, on the recommendation of District Superintendents, to children who have to live away from home to attend country high schools. Another fifty scholarships valued at £60 per annum are awarded on a competitive basis, according to results obtained at the Junior Certificate examination, to assist students proceeding to the Leaving Certificate examination.

Boarding allowances are paid to high school students who are obliged to live away from their homes while attending school. The Department also grants bursaries to selected students who, having passed the Junior Certificate examination, are willing to study for the Leaving Certificate preparatory to entering the teaching service. These bursaries are tenable for two years at either government high schools or non-government secondary schools.

Special Schools and Classes

The Division of Special Services provides a variety of assistance for physically and mentally handicapped children. A Kindergarten and Infant School for Deaf Children is maintained, as well as a Deaf School for older pupils. Special classes are organized for the blind and for the mentally handicapped, and instruction is given to patients at the Princess Margaret Hospital for Children and at other hospitals. The Department co-operates with welfare organizations, such as the Spastic Welfare Association and the Slow Learning Children's Group, by making teachers available to them.

Correspondence Tuition

Tuition by correspondence was introduced in 1918 to provide education for children living in remote areas or unable to attend school for other reasons. The service of the Western Australian Correspondence School now extends also to post-primary students in the smaller country schools, to sick and invalid children, and to some adults in country areas. Adults enrol mainly to prepare for nursing training or for the Junior Certificate and similar examinations, to supplement Technical Correspondence School courses with subjects not otherwise available, or to improve their general education. During 1962, instruction was given to 1,726 students of whom 656 were adults.

Schools of the Air are conducted through the radio network of the Royal Flying Doctor Service from bases at Derby, Kalgoorlie and Meekatharra to supplement tuition provided by the Correspondence School.

Itinerant Teacher Service

The Department conducts an itinerant teacher service which operates in the sparsely-settled areas of the State beyond Geraldton northward to the West Kimberley and inland as far as the Wiluna area. Two teachers, following separate itineraries and travelling from homestead to homestead by motor van, supplement the correspondence tuition of the children by personal advice to them and to their supervisors. A strip film projector is carried, together with a film library and a collection of children's books. The aim of the Department is to provide each year three visits, of up to three days' duration, to each family. In 1962 the teachers visited 166 children at 81 pastoral stations.

Native Education

Aboriginal and part-aboriginal children are admitted to ordinary schools and are educated under the same conditions as other children. For schools with a preponderance of native children, special attention is directed to the framing of courses of study suited to the vocational needs of the older native pupils. In August, 1962 there were 3,358 aboriginal and part-aboriginal children at government primary schools and high schools and 908 at non-government schools.

Agricultural Education

Agricultural education is provided at certain high schools. The former Narrogin School of Agriculture was absorbed into the high school system early in 1955 when it became a wing of the Narrogin Agricultural High School. Boys aged from 14 to 16 years who have successfully completed the general primary course are eligible for enrolment at this School, at the Agricultural High School at Harvey or the Agricultural Junior High Schools at Cunderdin and Denmark, where the two-year agricultural course is also available. Preference is given to the sons of farmers but other suitably qualified boys, with the physical capacity for farm work, are admitted. The curriculum is designed as a continuation of general education to standards equivalent to those of other types of schools but with adequate vocational emphasis. The aim is to produce young men capable of becoming leaders in rural communities as well as being successful farmers with an appreciation of the value of scientific methods in agriculture.

In addition to the activities of the Education Department in the field of agricultural education, facilities are also provided by the Department of Agriculture at the Muresk Agricultural College to which reference is made on page 146.

Technical Education

The principal institution of the Division of Technical Education is the Perth Technical College which originated in 1900 as the Perth Technical School. The greater part of the senior work of the Division, including the later stages of Technical Diploma courses and most Associateship studies, is carried out at the College.

The work of the Leederville Technical School relates mainly to the building industry and furnishing trades, but the School also accommodates a matriculation group. The Wembley Technical School provides courses for apprentices in the heavy metal trades, while the Carlisle Technical School is mainly concerned with training for trades associated with the automotive industry. The Mount Lawley Technical School provides training in baking, hairdressing and the electrical and meat industry trades, as well as commercial vocational training. Area schools at Claremont, Fremantle, Midland, Kalgoorlie and Bunbury aim to meet the needs of the districts in which they are situated and give tuition in those subjects for which there is sufficient local demand. Technical centres, where evening classes are provided, are located at sixteen of the Department's ordinary metropolitan schools and six of its country schools. The Technical Extension Service conducts correspondence courses and extension classes to provide instruction where it is not practicable to establish a technical school or centre.



UNIVERSITY OF WESTERN AUSTRALIA
Winthrop Hall

The Division has a Psychology and Counselling Service which is available to advise students in selecting a course and to assist them in their studies. It also provides consultant services to industry and commerce on staff selection and training and conducts special courses of study in psychology.

The highest qualification provided is that of Associateship, which generally entails three years' full-time study, or its part-time equivalent, from matriculation level in such fields as Applied Science, Architecture, Business Administration, Chemistry, Commerce, Engineering, Land Surveying, Mathematics, Metallurgy, Pharmacy and Public Administration. Several Diploma and Certificate courses, with lower entry requirements, are also offered on a full-time or part-time basis.

There are part-time day and evening vocational classes, usually leading to the award of a Diploma or Certificate, for skilled technical and semi-professional workers. Many of these courses are in fields not covered by an apprenticeship award. Part-time classes are established at all technical schools and centres, subject to local demand for tuition and availability of teaching staff.

Apprentices who live within reach of a technical school providing the appropriate instruction must attend classes, usually for eight hours per fortnight. In 1962, the number of trade apprentices enrolled was 5,300. For apprentices in country areas correspondence courses, sometimes conducted in supervised study groups, are available as well as intensive courses during which they have access to the full range of specialized instructors and equipment in the metropolitan area.

Home-making and hobby classes are held at all technical schools and centres where there is enough demand and teachers can be provided. Instruction is given in such activities as dressmaking, millinery, cookery, home furnishing, pottery, woodwork and motor vehicle maintenance.

The Associateships of the Perth Technical College and certain of the Diplomas are recognized by various professional institutes. Some Diplomas or groups of subjects are accepted for promotional purposes by the Public Service and other employing organizations, and a pass in some subjects may be credited by the University as a completed unit of study in courses leading to a University degree.

TECHNICAL EDUCATION

Particulars	1958	1959	1960	1961	1962
Number of—					
Colleges	1	1	1	1	1
Schools	6	6	6	7	7
Centres	16	17	12	12	17
Total	23	24	19	20	25
Number of Teachers at 1st July (*a*)—					
Perth Technical College	445	440	433	392	515
Schools	223	231	278	316	405
Centres	123	142	152	198	281
Total	791	813	863	906	1,201
Students Enrolled—					
Perth Technical College	13,506	13,221	13,329	10,963	10,970
Schools	7,877	8,016	8,824	11,208	12,882
Centres	3,030	3,255	3,603	4,904	6,896
Total	24,413	24,492	25,756	27,075	30,748
Males	15,977	15,604	17,017	17,992	20,362
Females	8,436	8,888	8,739	9,083	10,386
Total	24,413	24,492	25,756	27,075	30,748

(*a*) A teacher may occupy teaching positions at more than one school or centre. The number of individual teachers is not available.

Teacher Training

Teacher training is conducted at two colleges especially established for the purpose, the first at Claremont in 1902 and the second at Graylands in 1955. The basic course is of two years' duration and the minimum requirement for entrance is the possession of the Leaving Certificate or its equivalent. Selected students may study in extended fields for periods of from three to six years to obtain University degrees and other qualifications. There is also a one-year training course open to University graduates.

TEACHERS' COLLEGES

Particulars	1958	1959	1960	1961	1962
Number of Instructors—					
Males	42	44	45	53	56
Females	15	19	19	22	18
Total	57	63	64	75	74
Number of Students Enrolled—					
Males	496	541	558	545	499
Females	576	649	752	807	855
Total	1,072	1,190	1,310	1,352	1,354
Number of Students Graduating—					
Males	184	216	222	225	191
Females	254	264	*313	319	401
Total	438	480	*535	544	592

* Revised.

OTHER GOVERNMENT EDUCATION

Muresk Agricultural College

The Muresk Agricultural College was established by the Department of Agriculture in 1926 to provide scientific training in agriculture and farming practice. Students are admitted one year after passing the Junior Certificate examination, provided their headmasters give satisfactory reports of their work in specific subjects at the sub-Leaving level. At the College the students' general education is continued, and studies during the two years required for a Muresk Diploma of Agriculture include English, farm management and economics, agriculture, animal husbandry, chemistry, book-keeping and veterinary science.

Practical instruction is also given in cereal farming, stock husbandry, wool classing, pasture management, fodder conservation, farm building construction, farm mechanics and engineering, gardening, fruit growing and bee keeping. Breeding of pure-bred stock for distribution to farmers is another activity at the College which provides valuable training for the students. To help farmers to keep in touch with new developments in agriculture, the College also holds short courses in selected subjects at appropriate times.

The number of students enrolled at the College in 1962 was 75.

School of Mines

A School of Mines was established at Kalgoorlie in 1904 and has a branch at Norseman, opened in 1939. The School is under the control of the Department of Mines. There are courses leading to Associateship in Mining, in Metallurgy, in Engineering and in Mining Geology, as well as Certificate courses in assaying, surveying, mine management, engineering draughting, electrical engineering and mechanical engineering. Some technicians' courses are also available.

In the final term of the 1962 school year, the total number of students enrolled was 471.

NON-GOVERNMENT SCHOOLS

The non-government schools, which are conducted mainly by religious organizations, provide education from kindergarten to the end of the secondary school course, equivalent to the final year in the government high schools. The curriculum at the primary and secondary levels is substantially the same as that in the government schools.

Almost all of the schools shown under the heading of Undenominational in the following table are kindergartens. The Education Act requires that every person conducting a kindergarten must hold a permit issued for the purpose by the Education Department. The Kindergarten Union of Western Australia, a voluntary organization subsidized from government funds, maintains a training college for kindergarten teachers.

During the year 1962 the number of kindergartens registered with the Education Department was 151, of which 54 were in country areas. Of the total, 64 were affiliated with the Kindergarten Union, 45 were controlled by independent committees, 12 by other organizations and 30 were conducted privately.

The following table shows, for each of the years from 1958 to 1962, the numbers of non-government schools, teachers and scholars, classified according to the religious denomination of the school. The grade of education of scholars is also given.

NON-GOVERNMENT SCHOOLS (*a*)

Particulars	1958	1959	1960	1961	1962
NUMBER OF SCHOOLS					
Denomination—					
Church of England	8	9	9	9	9
Methodist	3	3	3	3	3
Presbyterian	2	2	2	2	2
Roman Catholic	170	172	173	173	173
Other	7	8	8	8	9
Undenominational	110	120	123	141	150
Total	300	314	318	336	346
NUMBER OF TEACHERS (*b*)					
Denomination of School—					
Church of England	135	159	168	174	171
Methodist	57	65	66	71	72
Presbyterian	55	57	58	61	60
Roman Catholic	722	736	758	776	783
Other	27	26	26	30	26
Undenominational	221	208	224	239	226
Total	1,217	1,251	1,300	1,351	1,338
Males	277	286	286	300	(*c*)
Females	940	965	1,014	1,051	(*c*)
Total	1,217	1,251	1,300	1,351	1,338
NUMBER OF SCHOLARS					
Denomination of School—					
Church of England	2,427	2,960	3,082	3,210	3,351
Methodist	1,148	1,274	1,320	1,319	1,321
Presbyterian	1,093	1,104	1,153	1,158	1,137
Roman Catholic	25,948	26,849	27,177	28,116	28,649
Other	380	432	469	599	660
Undenominational	3,904	3,825	4,000	4,359	4,979
Total	34,900	36,444	37,201	38,761	40,097
Grade of Education—					
Kindergarten	4,078	4,349	4,412	4,752	5,361
Primary	21,731	22,286	22,087	22,568	22,908
Secondary: Years 1, 2 and 3	7,418	8,014	8,639	9,278	9,462
Years 4 and 5	1,673	1,795	2,063	2,163	2,366
Total	34,900	36,444	37,201	38,761	40,097
Males	17,105	17,847	18,158	18,913	19,532
Females	17,795	18,597	19,043	19,848	20,565
Total	34,900	36,444	37,201	38,761	40,097

(*a*) From 1958 to 1961 inclusive, the numbers of schools and teachers are as at the end of the school year, and the numbers of scholars are as at 1st August. For 1962, all figures are as at 1st August. (*b*) Excluding persons teaching part-time. (*c*) Not available.

UNIVERSITY EDUCATION

University education first became available in Western Australia in 1898, with the formation of the Extension Committee of the University of Adelaide by which facilities were provided for external studies in courses for degrees in Arts and Science. The first step towards the establishment of a university in Western Australia was taken in 1904, when a University Endowment Act providing for the incorporation of a trust to administer funds for the purpose was passed by the State Parliament. Following a favourable report made by a Royal Commission under the chairmanship of Dr. (later Sir Winthrop) J. W. Hackett, the University was established by the University of Western Australia Act of 1911. Teaching began in 1913 in subjects related to the Faculties of Arts, Science and Engineering. Additional Faculties established since that time are those of Law (1927), Agriculture (1936), Dental Science (1946), Education (1947), Economics (1954) and Medicine (1956). The Faculty of Economics was reconstituted as the Faculty of Economics and Commerce in 1961.

The following table gives particulars of teaching staff, the number of students and the numbers of degrees conferred and diplomas granted during each of the years 1958 to 1962.

UNIVERSITY OF WESTERN AUSTRALIA

Particulars	1958	1959	1960	1961	1962
NUMBER OF TEACHERS					
Full-time (*a*)—					
Professors	27	30	31	31	31
Readers	23	25	26	32	34
Senior Lecturers	60	63	67	80	87
Lecturers	47	53	61	67	77
Tutors, Demonstrators	2	2	6	13	18
Total—Full-time	159	173	191	223	247
Part-time (*b*)—					
Lecturers	53	51	53	27	20
Graduate Assistants, Tutors, Demonstrators	41	47	53	202	216
NUMBER OF STUDENTS					
Internal, Full-time	1,335	1,663	1,851	1,988	2,144
" Part-time	962	1,075	1,219	1,183	1,334
External	358	426	431	366	375
Total	2,655	3,164	3,501	3,537	3,853
Males	2,067	2,436	2,674	2,740	2,947
Females	588	728	827	797	906
Total	2,655	3,164	3,501	3,537	3,853
DEGREES (‡) AND DIPLOMAS					
Degrees (‡) Conferred—					
Agriculture	17	10	13	13	22
Arts	111	107	130	137	166
Dental Science	9	10	11	11	4
Economics	1	2	3	6	11
Education	27	25	27	29	23
Engineering	48	31	33	31	38
Law	3	17	12	13	11
Medicine		13	3	15	32
Science	71	65	74	66	108
Total	287	280	306	321	415
Males	241	227	249	240	327
Females	46	53	57	81	88
Total	287	280	306	321	415
Diplomas Granted—					
Education	52	47	42	51	47
Other	2	2		4	2
Total	54	49	42	55	49
Males	40	38	31	46	40
Females	14	11	11	9	9
Total	54	49	42	55	49

(*a*) Figures revised since previous issue. From 1958 to 1960, numbers are as at end of year ; from 1961, at 31st July. (*b*) From 1958 to 1960, figures represent number of teachers at end of year. From 1961, they represent units of 100 hours of teaching time per annum. (‡) Excluding honorary degrees.

Degrees

Degrees are granted in the Faculties of Arts, Law, Education, Economics and Commerce, Science, Engineering, Agriculture, Dental Science and Medicine.

Courses for the degrees of Bachelor of Arts, Bachelor of Economics, Bachelor of Commerce and Bachelor of Science extend over a period of not less than three years ; those for the degrees of Bachelor of Music, Bachelor of Laws, Bachelor of Education and Bachelor of Science in Agriculture, over not less than four years ; and those for the degrees of Bachelor of Science in Forestry, Bachelor of Engineering, Bachelor of Surveying and Bachelor of Dental Science, over not less than five years. Honours degree courses in Arts, Economics and Science are usually of four years' duration. The course in the Faculty

of Medicine for the degrees of Bachelor of Medicine and Bachelor of Surgery extends over six years, and that for the degree of Bachelor of Medical Science over four or five years according to the subjects taken.

The degrees of Master of Arts and Doctor of Letters, Doctor of Music, Master of Laws and Doctor of Laws, Master of Education, Master of Economics, Master of Science and Doctor of Science, Master of Engineering Science, Master of Engineering and Doctor of Engineering, Master of Science in Agriculture and Doctor of Science in Agriculture, Master of Dental Science and Doctor of Dental Science, and Master of Surgery and Doctor of Medicine, are conferred by the University. The degree of Doctor of Philosophy is also given for research in faculties other than Law and Economics and Commerce.

University Government

The original Act provided that the Senate and Convocation should constitute the governing authority with power to make statutes for " the management, good government and discipline of the University."

The Senate consists of 21 members, of whom six are appointed by the Governor, six are elected by Convocation, two are elected by the full-time teaching staff, three are *ex officio* members (the Vice-Chancellor of the University, the Under Treasurer of the State, and the Director-General of Education), and four are co-opted members. Convocation consists of graduates of the University and such other persons as are eligible for membership under the provisions of the University of Western Australia Act.

Since an amendment to the Act in 1944 the Senate alone has been the governing authority and is responsible, subject to the Act and the statutes, for the entire control and management of the University. Statutes originate in the Senate and are submitted to Convocation for its consideration, and although Convocation may suggest amendments the Senate is not bound to accept them. The Act requires that statutes shall be submitted to the Governor for approval, after which they have the force of law.

The Chancellor is the titular head of the University. He is elected annually by the Senate from among its members and presides over its meetings. The Vice-Chancellor is the chief executive officer of the University and is appointed by the Senate for a period not exceeding ten years, at the end of which term he is eligible for reappointment. At meetings of Convocation the chairman is the Warden who is elected annually by Convocation from among its members.

The Guild of Undergraduates is constituted under the Act as an association of undergraduates " for furthering of their common interests, and shall be the recognised means of communication between the undergraduates and the governing authority of the University." The government of the student body is vested in the Guild Council to which the Senate appoints two of its own members, the remaining members of the Council being elected in accordance with regulations made by the Guild.

Principal Benefactions

A large bequest to the University was made under the will of its first Chancellor, Sir Winthrop Hackett, who died in 1916. Of the total amount of £425,000, a sum of £200,000 together with accrued interest was allocated to the erection and maintenance of a group of buildings comprising a ceremonial hall (Winthrop Hall), a Senate Chamber, administrative offices, a library, lecture rooms and a students' building (Hackett Hall). A further sum of £200,000 was devoted to the provision of studentships, scholarships, bursaries and other financial help for deserving students of limited means. Under his will Sir Winthrop Hackett also provided an endowment for a Chair of Agriculture, and Saint George's College, the first residential college within the University, was built and endowed by the Church of England from funds bequeathed by him from the residue of his estate.

In 1927 the University received from the late Robert Gledden an estate valued at £60,000 to provide two travelling scholarships in " applied science more particularly related to surveying, engineering or mining, or cognate subjects." The bequest has been used to establish the Robert and Maude Gledden Travelling Fellowships and to provide research studentships and fellowships.

In 1957 Mrs. M. B. Raine made a deed of gift in favour of the University for an amount of £153,900 to be applied to medical research. Mrs. Raine died in 1960 and bequeathed her estate, valued for probate at £688,784, to the University for the same purpose.

The sum of £62,500 was presented to the University in 1958 by the Wellcome Trust to endow the Wellcome Research Chair of Pharmacology.

In 1962 the University received the sum of £55,000, bequeathed for general purposes under the will of Dr. W. S. McGillivray.

Student Fees and Scholarships

The Royal Commission appointed to inquire into the establishment of a University recommended that teaching should be free and suggested that " if fees are found to be necessary, they should be on

the lowest possible scale." Until 1962 lecture fees were not charged to students normally resident in Australia, except those in the Faculty of Medicine, where tuition fees were payable in the second and later years, and those enrolled at the Western Australian College of Dental Science, an institution affiliated with the University, who paid lecture fees to the College. All students paid a " faculty service charge " designed to cover such items as the use of the library, annual examination fees, the use of laboratory equipment, and the lecture synopses provided in some courses. To assist in meeting the increasing costs of operation resulting from a rapidly growing student population and to enable the University to take full advantage of Commonwealth financial aid available under the States Grants (Universities) Act, a new system of annual " enrolment fees " was introduced in 1962. The current tuition fees, which are considerably higher than the faculty service charges previously levied, are assessed on the number and grade of subjects to be taken during the year by students in the Faculties of Arts, Education, Economics and Commerce, and Science. In the Faculties of Law, Engineering, Agriculture, Dental Science and Medicine, they take the form of an annual charge for each year of the course. In all faculties, students whose normal place of residence is outside Australia are required to pay an annual overseas students' fee. Subscriptions to the Guild of Undergraduates and to certain faculty associations are payable by all students.

Financial assistance is available to students under the Commonwealth Scholarship Scheme. Awards are made on merit and, in addition to having their fees paid, scholarship holders may receive a living allowance, which is subject to a means test. Hackett Bursaries are offered each year for students of merit whose means make it difficult for them to undertake or continue a full-time undergraduate course. The Education Department provides a number of University Exhibitions for competition among candidates at the Leaving Certificate examination.

As well as the normal awards under the Commonwealth Scholarship Scheme, there is provision in the Scheme for financial assistance for post-graduate studies in the form of a living allowance, which is not subject to a means test, and payment of fees. Hackett Scholarships, tenable at the University of Western Australia or in special circumstances at other recognized institutions in Australia, are open to graduates of the University. Graduates may also apply for Hackett Studentships which, in addition to other financial benefits, carry a travel grant where the Student elects to study overseas or in another State. Some large private industrial concerns also make annual awards for study at post-graduate level.

Tuition

In addition to the normal lectures and tutorials for full-time students, courses for part-time students are offered in the Faculties of Arts, Education, and Economics and Commerce. By arrangement with the Perth Technical College, evening instruction is given in some science subjects. Certain subjects may be taken at institutions affiliated with the University. These are the Perth Technical College and the School of Mines. Other affiliated institutions are Claremont Teachers' College, Graylands Teachers' College and the Kindergarten Training College.

Students who live within the State but outside the metropolitan area are able to enrol as external students in the Faculties of Arts, Education, and Economics and Commerce.

Colleges and Hall of Residence

There are four residential colleges within the University. For men students, Saint George's College is conducted by the Church of England, Saint Thomas More College by the Roman Catholic Church and Kingswood College by the Methodist Church. Saint Catherine's College is an undenominational college for women students.

Currie Hall is an undenominational hall of residence for men students.

Public Examinations Board

The Public Examinations Board is constituted by University statute for the purpose of conducting school certificate examinations. The University, the Education Department and the non-government secondary schools are represented on the Board. The Junior Certificate examination is normally taken by scholars at the end of the third year in government high schools or non-government secondary schools. The Leaving Certificate examination is the final examination in Western Australian schools and a pass in certain specified subjects enables a student to matriculate at the University.

Adult Education Board

The Adult Education Board was established by the University in 1928. Its activities are controlled by a full-time Director of Adult Education.

The Board has its headquarters in Perth and operates at a number of centres in the suburbs and in country towns. Its work is generally non-vocational in character and, although the emphasis is on cultural entertainment, attention is given to the applied social sciences. Several series of classes, lectures, conferences, discussion groups and leadership training schools are conducted. The Board co-operates with other organizations, such as the Junior Farmers' Movement, the Country Women's Association and the Parents and Citizens' Federation. Music recitals, ballet performances, art exhibitions, screenings of high-quality films, drama presentations and drama schools are arranged by the Board in the metropolitan area and most of these activities extend also to the larger country towns. A Summer School is held at the University each year. The annual Festival of Perth was inaugurated by the Board in 1953.

The Board maintains an Adult Education Library and operates a Box Library Scheme for local discussion groups in both metropolitan and country areas.

Finance

The following table relates to University finance in each of the years from 1958 to 1962. Particulars of grants made specifically for capital purposes, and expenditure from such grants, are not included.

UNIVERSITY OF WESTERN AUSTRALIA—FINANCE

Particulars	1958	1959	1960	1961	1962
GENERAL ACTIVITIES					
Receipts—	£	£	£	£	£
Government Grants—					
State	632,079	670,571	755,312	861,000	993,317
Commonwealth	310,590	375,400	454,175	546,080	640,261
Interest, Rents, Dividends and Donations	31,347	35,053	54,674	33,633	41,472
Students' Fees	45,896	58,832	66,827	135,543	178,395
Charges for Services (*a*)	4,137	4,196	5,369	6,767	5,599
Other Receipts	9,502	10,334	15,094	26,606	23,799
Total	1,033,551	1,154,386	1,351,451	1,609,629	1,882,843
Payments—					
Administration :					
Salaries	53,680	59,468	75,473	106,550	121,370
Other	29,272	30,690	37,825	44,939	59,119
Teaching Department :					
Salaries	589,741	659,743	794,555	954,215	1,054,600
Other	170,960	135,611	166,934	151,035	263,938
Library :					
Salaries	16,445	20,566	28,385	44,160	48,820
Other	40,736	34,133	41,617	44,483	55,657
Maintenance of Premises :					
Salaries and Wages	29,138	32,434	41,835	49,148	56,755
Other	52,996	62,196	69,400	97,852	113,225
Adult Education—Senate Subsidy	19,040	21,000	29,376	29,735	37,355
Other Payments	56,116	60,557	82,129	73,241	17,975
Total	1,058,124	1,116,398	1,367,529	1,595,358	1,828,814
SPECIAL ACTIVITIES					
Receipts—	£	£	£	£	£
Government Grants :					
State—Adult Education	4,850	4,850	4,850	4,850	4,850
Commonwealth—Research	25,047	63,417	70,777	46,293	60,370
Non-government Research Grants	52,707	26,624	25,686	78,716	101,159
Interest, Rents, Dividends and Donations, etc.	47,543	100,572	96,049	105,424	168,743
Candidates' Fees for Public Examinations	41,489	46,049	50,611	57,739	65,952
Adult Education and Extension Fees	16,140	14,707	11,914	22,194	21,645
Adult Education—Senate Subsidy	19,040	21,000	29,376	29,735	37,355
Total	206,816	277,219	289,263	344,951	460,074
Payments—					
Expenses of Public Examinations	38,912	43,935	47,333	54,798	63,052
Adult Education and Extension	40,405	42,772	48,155	56,549	57,110
Scholarships, Bursaries, Prizes, etc.	30,968	35,698	50,031	35,851	54,417
Special Research Expenses	61,296	83,732	84,398	117,334	154,304
Other Payments	5,504	6,782	6,654	23,341	45,134
Total	177,085	212,919	236,571	287,873	374,017

(*a*) Mainly engineering and other testing fees.

The University's principal source of revenue is in the form of grants made by the State Government. The University of Western Australia Act provides for the payment of an annual subsidy of £250,000 and "such additional amounts as may be appropriated by Parliament from time to time." In 1962, State Government assistance accounted for more than one-half of the total receipts of £1,882,843 for general activities. By a series of States Grants (Universities) Acts, the first of which was passed in 1951, the Commonwealth Government has also made regular annual contributions, and the amount of £640,261 paid to the University in 1962 represented about one-third of its total income for general activities. A Committee on Australian Universities (the "Murray Committee") was appointed in 1957 to investigate, among other things, the financial position of the universities. In accepting its principal recommendations the Commonwealth agreed, under the provisions of the States Grants (Universities) Act of 1958, to continue grants for recurrent expenditure between the years 1958 and 1960, to make additional recurrent grants, to assist the universities in the provision of buildings and equipment, and to make grants for expenditure on residential college buildings and halls of residence. Similar provisions relating to the years 1961, 1962 and 1963 are contained in the States Grants (Universities) Act passed by the Commonwealth Parliament in 1960.

CHAPTER V — *continued*

PART 2—PUBLIC LIBRARIES, MUSEUM, ART GALLERY, AND SCIENTIFIC INSTITUTIONS

PUBLIC LIBRARIES

Library Board of Western Australia

The Library Board of Western Australia, established under the provisions of the Library Board of Western Australia Act, 1951–1955, comprises thirteen members appointed by the State Government, and is responsible for all forms of public library services which are financed either wholly or in part from State funds. The Director-General of Education and the Director of Adult Education are *ex officio* members of the Board which also includes five representatives of local governing authorities and associations, a representative of the Library Association of Australia and five other members.

The Board was set up as an independent statutory body in 1952. Its functions are to encourage and assist local authorities to establish public libraries and to co-ordinate those libraries into a State-wide system, to administer funds made available by the Government for this purpose, to provide for the training of librarians and library assistants and to advise the Minister for Education and participating bodies on matters of general policy relating to libraries. Following an amendment to the Act, the administration of the Public Library of Western Australia was transferred to the Board on the 1st December, 1955 and its name changed to the State Library of Western Australia.

The library service of Western Australia thus consists of the State Library, which functions as the reference division of the service, and a number of independent public libraries which are jointly supported by local authorities and the Board.

The book stock of the Board at the 30th June, 1962 comprised approximately 200,000 bound volumes in the State Library and about 300,000 volumes in lending library services, including local public libraries.

State Library of Western Australia

The original Library was established in 1887 as the Victoria Public Library in commemoration of Queen Victoria's Golden Jubilee. It became known later as the Public Library of Western Australia and in 1955 as the State Library of Western Australia.

In addition to providing reference library facilities for the metropolitan area, its service extends throughout the State, through the agency of a local public library wherever possible but also by post direct to country inquirers not in contact with a local library.

It is divided into six specialist subject units, comprising four libraries and two centres. The J. S. Battye Library of West Australian History was developed from the former Archives Branch. All material relating to Western Australia, including the State archives, has been concentrated in this library. The other libraries are The Library of Business, Science and Technology, The Library of Social Sciences, Philosophy and Religion and The Library of Literature and the Arts. The Bibliographical Centre contains catalogues of the State Library and of all local public libraries, of additions since 1956 to all other major libraries in the State, as well as a wide range of printed bibliographies, indexes to periodicals and subject guides. It is a centre of co-operation between libraries in Western Australia and with those in other Australian States and oversea countries. The Information Centre provides the information services for the State-wide public library system. It is equipped with current Australian and oversea telephone and trade directories, business guides, commercial publications and a wide variety of similar quick reference material. The Centre is designed principally to provide immediate answers to inquiries, mainly in the commercial field. Current newspapers, which include all those published in Western Australia, the main ones from other Australian States and a representative selection from oversea countries, are available for reference in the Information Centre.

The State Library is fully equipped with micro-film and photo-copy apparatus and copies of material are available on payment of an appropriate fee.

Local Public Libraries

At the 30th June, 1962, there were 60 local public libraries associated with the Library Board's service. The local government authorities conducting these libraries provide accommodation and staff, while the Library Board provides all the books and bibliographical services and does all cataloguing on behalf of the local libraries. The administrative independence of the local libraries is secured under the provisions of the Library Board of Western Australia Act, 1951–1955. Apart from exercising a statutory obligation in respect to the expenditure of State subsidies, the Board takes no direct part in the administration of local public libraries. If the Board's expenditure in respect of a local library exceeds that of the local authority, an amount to equalize the expenditure is payable to the Board by the local authority. Books are provided on a minimum basis of one volume per head of the population of the district concerned and all non-fiction books in public libraries throughout the State are made available on request to the Board at any library associated with its library service.

MUSEUM

The Western Australian Museum has developed from two earlier collections. One of these, the Museum of the Swan River Mechanics' Institute, was founded by public subscription in 1860, and the other was the Geological Museum at Fremantle, which was started in 1881. In 1889 the contents of the Geological Museum were moved to the former Perth Gaol (which is still part of the Western Australian Museum) and a Curator was appointed in 1891. In the following year the museum of the Swan River Mechanics' Institute was purchased, and the collections combined to form the Public Museum.

The Museum, which became known as the Western Australian Museum in 1897, is controlled by a Board of five members appointed by the State Government under the provisions of the Museum Act, 1959. The staff includes a Director, six curators and other professional and technical staff.

The Museum is devoted mainly to natural history and includes extensive geological collections and collections of ethnography. Emphasis in both display and research is on the fauna of Western Australia and there is a fairly extensive scientific library. Research is related specifically to the marine fauna of Western Australian waters, mammals, birds, reptiles, insects and anthropology.

The Museum is an active educational instrument. The scientific staff lecture in Adult Education programmes and in the University departments. Public lectures are held and there is also an extensive programme of nature study for children. A children's centre, staffed by a Museum teacher provided by the Education Department, is open during school holidays. During 1962, this centre was visited by 15,000 children. Regular classes are held during school terms and 8,523 children from 36 metropolitan schools attended during 1962. In addition, special visits were made by 2,207 children from schools not included in the regular series.

In connexion with its work of education, research and conservation, the Museum is often called upon to act in an advisory capacity to the Government. In particular, senior staff serve on committees formed for the purpose of protection of native fauna and the preservation of aboriginal sites and artifacts.

The Museum serves as a centre for associations with interests in natural history. The Royal Society of Western Australia, the Astronomical Society and the Gould League hold regular meetings at the Museum.

ART GALLERY

The Western Australian Art Gallery is under the control of a Board of five members appointed by the State Government. The Gallery occupies part of a building shared with the Museum. The lower gallery is used mainly for lectures, art films and the display of interstate and oversea exhibitions. Works from the permanent collection are exhibited in the upper gallery, while the print room is used to house and exhibit the collection of prints and drawings. Both displays are changed regularly. Selections from the art collection are shown on the upper floor and a special display in the entrance to the lesser hall is devoted to the work of a different artist each month.

The Art Gallery's collection at the 30th June, 1962 consisted of 400 oil paintings, 215 water colours, 10 pastels, 1,422 drawings and prints, 29 sculptures, 9 miniatures, 1,103 reproductions, and a number of ceramics and other art objects. The collection is constantly being increased by purchases, gifts and bequests.

The Gallery has extended its services throughout the metropolitan area and country districts. Reproductions of paintings are circulated by means of its loan service to various public institutions in the metropolitan area. Educational and cultural bodies in rural areas participate in a similar scheme, related groups of reproductions being boxed for country distribution together with discussion notes. Touring exhibitions from the permanent collection are also taken to country districts at regular intervals.

These activities are supplemented by publications of various kinds, which are distributed to schools and other institutions or direct to the public. Reproductions of some works in the collection are also available.

The Art Gallery operates a general information service which is widely used.

SCIENTIFIC INSTITUTIONS

State Government Observatory

The State Government Observatory was established at Perth in 1896 on a site facing the main entrance to King's Park and overlooking the city from the west.

The principal astronomical instruments of the Observatory are a photographic refractor of 13 inches aperture and a 6-inch meridian transit circle. Between 1900 and 1920, observations with these telescopes were used to compile catalogues of star positions in the Perth zone (31° to 41° south declination) of the International Astrographic Catalogue programme. Following the completion of this project, little systematic research was carried out until the International Geophysical Year (1958–59), when a Markowitz Moon Camera was attached to the photographic telescope and a series of observations of the position of the moon, relative to the stars, was obtained. Later, photographic observations for studies of stellar motions were begun and a start was made on the renovation of the meridian transit circle. The times of occultations of bright stars by the moon have been recorded as opportunity offered, and accurate positions of brighter southern comets determined from time to time.

Seismographs at the Observatory have been recording earth tremors almost continuously since 1901. The Observatory maintains the time service for the State, furnishing signals to the Post Office, the Railways Department, broadcasting stations and for transmission to shipping, and is a registered laboratory for testing chronometers and stop-watches. Predictions of tides on the north and north-west coasts are prepared for publication in an annual volume of tide tables.

At the beginning of August, 1963 the Observatory's telescopes and seismographs were dismantled to make way for a block of State Government offices to be erected on the Observatory site. Planning for the removal of the Observatory had been delayed while a committee, set up by the Treasury, investigated the need for continued maintenance of an Observatory at State expense. Authority to proceed with plans for re-establishment was given towards the end of June, 1963. The new site for the Observatory is at Mount Gunjin, near Bickley in the Darling Range, and it is anticipated that the removal will be completed about the end of 1964.

Seismological observations are now being made by the geophysical observatory established at Mundaring in 1959 by the Bureau of Mineral Resources, Geology and Geophysics (Department of National Development). The State Government Observatory, in view of the proximity of its new site to the Mundaring observatory, will discontinue this work and its seismological records have been transferred to the geophysical observatory.

State Government Chemical Laboratories

In 1922 the various chemical services of the State Government were amalgamated to form the Government Chemical Laboratories, primarily for the performance of chemical work required by Government Departments. In addition, the Laboratories serve government instrumentalities and semi-government authorities and undertake some chemical work for the general public. The activities of the Laboratories are organized under six Divisions, and a Physics Section, the separate functions of which are described briefly in the following summary.

The *Agriculture, Forestry and Water Supply Division* does analytical work, on soils, related principally to the experimental work of the Department of Agriculture (*see also* Chapter VIII, Part 1) ; on waters, for the Metropolitan Water Supply and the Country Water Supply Departments, as well as for primary producers seeking an assessment of the suitability of private supplies for domestic, irrigation and livestock purposes ; on plants, as fodders for livestock and also to assess the nutritional requirements of plants with particular reference to the use of fertilizers and the correction of trace element deficiencies ; on fertilizers and manures generally ; and on animal tissues for diagnostic purposes.

The *Engineering Chemistry Division* was formerly the Bureau of Research and Development of the Department of Industrial Development and was associated with the Fuel Technology Division in the production of a metallurgical fuel from Collie coal. It is now actively concerned with chemical means of utilization of mineral resources, such as production of sponge iron, upgrading of ilmenite and low grade ores, and the beneficiation and calcination of lime sand.

The *Food, Drugs, Toxicology and Industrial Hygiene Division* deals with the analysis of foods, including milk ; drugs ; police work, including human and animal toxicological examinations for poisons and analysis of blood and urine for alcohol concentration ; industrial hygiene, including determinations relating to the amount of potentially harmful substances present in industrial and commercial materials or associated with working conditions ; and industrial effluents and pollution surveys of river and ocean waters.

The *Fuel Technology Division* has been primarily concerned with Collie coal and its uses and has done important work on this local coal for the making of coked briquettes as a metallurgical fuel and for the production of town gas. The Division's investigations have extended to other fuels, including sawdust and woodwaste, and also to domestic appliances using fuel, and reduction of atmospheric pollution by emission from smoke-stacks.

The *Industrial Chemistry Division* is used extensively as a source of information and advice on technical problems relating to industry in Western Australia. Research is also in progress on protective coatings, including paint, and on natural products from native vegetation.

The *Mineralogy, Mineral Technology and Geochemistry Division* is basically concerned with minerals, their occurrence and identification, but it also carries out the testing of clays and of aggregates for cement and concrete work, as well as corrosion and other tests. Analyses are done for the Government Geologist in connexion with mineral surveys, notably those for copper and iron. This Division is also the reference laboratory for analyses of crushings of gold ores by the State Batteries. An important part of its work is the identification of mineral specimens forwarded by prospectors and others and the Division deals with many hundreds of such samples every year.

The *Physics and Pyrometry Section* is mainly concerned with X-ray examination of minerals and as a reference laboratory for heat and temperature measurement.

Details of the operations of the Government Chemical Laboratories are published in the Annual Report of the Director.

The Institute of Agriculture, University of Western Australia

The Institute of Agriculture was established in 1938 within the University to provide research facilities and staff essential for the effective training of professional agricultural scientists at both undergraduate and graduate levels. It comprises the teaching and examining Faculty of Agriculture, and the research staff associated with it. Although the Institute is financed to some extent from University funds, substantial research grants from producer organizations and other bodies and individuals interested in the promotion of agriculture have made possible most of the research that has been undertaken since its establishment.

During the first ten years of its existence, and despite the dislocation of the war years, it initiated research on plant and animal problems of the pastoral areas, commenced a series of fundamental studies related to the nutrition of ruminants, investigated factors affecting the baking quality and nutritive value of wheat and flour, elucidated factors affecting the fertility of sheep, and carried out a series of economic surveys of the sheep, wheat, dairying, pig and poultry industries. The work of these years is summarized in the report of the Director, published in 1949.

Since 1948 the research programme has been greatly increased and its scope widened to give greater emphasis to agronomic problems, especially those concerned with the maintenance and improvement of fertility in the wheat-growing regions. Fields of research included an extensive programme of plant breeding and genetical research aimed at increasing the productivity and extending the climatic limits of legumes, particularly subterranean clover, medics and lupins ; the investigation of the agronomic value of native legumes ; and the examination of the factors influencing the gains and losses of nitrogen and organic matter in wheat belt soils, including nitrogen in rainfall, nitrogen and organic matter increments and losses under a range of treatments, and nitrogen fixation by free-living bacteria as well as by root nodule organisms. A particularly strong research group concerned with nodulation problems in legumes has been built up.

Factors affecting leaching losses of potassium, sulphur and other elements have been investigated. Another research group has recently commenced studies on the response of plants to fertilizers. New information has been obtained on the uptake of potassium by pasture plants and similar studies on phosphorus and trace elements are commencing. In addition, new research groups are developing in soil physics and soil chemistry following the establishment of a Department of Soils and Plant Nutrition within the Institute in 1963.

At the same time, investigations into animal, economic and pastoral problems have been further developed. Fundamental studies on factors affecting the microbial population of ruminants and the nutritive value of feeding stuffs, which have already contributed to the better and more economical feeding of sheep and cattle during the dry summer season, have attracted world-wide attention, as have the researches into the nature and cause and control of the oestrogenic effects of subterranean clover.

Further and more detailed economic surveys have been made of the wheat-sheep farming industry, of the dairying industry not using irrigation and of dairy farms producing whole milk for the metropolitan area. The John Thomson Agricultural Economics Centre was established in 1961 as part of the Institute. The staff of this Centre is concerned with "operations research" into economic problems of the agricultural and pastoral industries.

This brief review of the very wide range of the research activities of the Institute of Agriculture, at both the fundamental and at the more applied level, illustrates the extent to which it contributes to the assistance and service of the rural industries, indirectly by its training of agricultural scientists and directly through its manifold research projects.

Commonwealth Scientific and Industrial Research Organization

Several Divisions of the Commonwealth Scientific and Industrial Research Organization are actively engaged in research work in Western Australia.

Division of Soils—During the post-war period the Division of Soils has carried out soil surveys of large areas, mainly in the Great Southern districts to assist in the planning of War Service Land Settlement schemes. The soils of the areas concerned are predominantly lateritic and the study of their trace mineral status and clay mineralogy has been completed. In the Swan Coastal Plain, detailed soil surveys of existing and proposed irrigation areas of Pinjarra, Harvey and Capel and the vine-growing areas of the Swan Valley have also been completed. Information obtained during this work provides the basis for study of the pedology and distribution of the soils of the whole Coastal Plain.

In recent years more attention has been given to the principles governing the distribution of soils. Field studies on the development of soils in relation to landscape evolution and past climates are in progress in representative areas of York and Merredin. As an extension of the work in the Merredin area, a study of the hydrology of a typical wheat-belt valley in relation to soil salinity is in progress.

An important part of the work of the Division is a study of the chemistry of lateritic soils as it affects the growth of exotic pines. This research is being done in collaboration with the Western Australian Forests Department.

Division of Plant Industry—Most of the activities of the Division of Plant Industry have been directed to the pasture problems of the sheep areas in the south-west of the State. More recently, studies were initiated on the sandy soils of the Swan Coastal Plain.

The influence of environmental factors on the growth and persistence of pasture plants, for the most part clovers and grasses, is still under examination.

In the plant nutrition programme, studies on phosphorus and nitrogen are continuing, and some attention is now being given to potassium and cobalt. A comprehensive examination is being made of the many factors influencing soil fertility build-up in subterranean clover pastures.

A large number of introductions of pasture plants and crop plants are under test by the Plant Introduction group, the main emphasis being on new pasture plants for the wheat belt.

Studies on pasture utilization with particular reference to the breeding ewe are proceeding and new work is being done on the clover infertility problem.

The Division's programme is centred at the Western Australian Regional Laboratory at Perth and includes field work at a number of country centres.

Division of Entomology—Since 1946 the Division of Entomology has been concerned with developing satisfactory methods of controlling the Red-legged Earth Mite and Lucerne Flea in pastures. Attention is now being directed to an intensive study of the population dynamics of these two pests. Detailed observations have been made on density fluctuations in pastures in the Moora and Waroona districts with the object of determining the factors which govern abundance in nature. A special study is being made of the part played by the predatory Bdellid Mites.

Division of Wildlife Research—The Division of Wildlife Research is concerned with investigations on the higher vertebrates (more particularly mammals and birds) and these cover not only species of economic importance, but the native fauna generally. The Division played a part, in association with

the Department of Agriculture, in the control of rabbits by the introduction of the disease myxomatosis, and carried out a basic research project on the control of the Euro (a species of kangaroo) in the Pilbara district.

Among birds, the ecology of the Emu and the White-tailed Black Cockatoo are being studied. Other current projects are experimental and field studies on the factors controlling breeding seasons of native birds under Western Australian conditions and surveys of the distribution of the arid-country fauna. The Division organizes the Australian Bird-Banding Scheme and conducts a seasonal trapping and marking scheme on the migratory shore-birds at the Pelican Point sanctuary on the Swan River.

Division of Fisheries and Oceanography—The Division of Fisheries and Oceanography has supplied the project leader for the Western Fisheries Project set up co-operatively by the Commonwealth Scientific and Industrial Research Organization, the Department of Primary Industry, the Fisheries Departments of Western Australia and South Australia, the Zoology Department of the University of Western Australia, and the Western Australian Museum. At present the research includes work on crayfish, Australian salmon, prawns, tuna and whales. A senior officer of the Division has been stationed at Perth to participate in the research on crayfish and to direct research on sperm whales. Using naval frigates the Division is continuing work on the physico-chemical and biological oceanography of the eastern Indian Ocean.

Division of Mathematical Statistics—Officers of the Division of Mathematical Statistics stationed at Perth are currently investigating the application of statistical methods to special problems of local interest in the fields of engineering, microbiology, plant breeding and plant ecology. In addition, they act in an advisory capacity to other research workers in the State on matters relating to the design of experiments and the analysis and interpretation of data.

Other Divisions—Besides the research work being conducted at the Regional Laboratory, Perth and at field stations, various co-operative programmes are under way in University departments and in the State Department of Agriculture. The Commonwealth Scientific and Industrial Research Organization has several officers stationed at the Kimberley Research Station investigating the crop and pasture problems of the northern areas.

Department of Agriculture

Reference to the scientific work of the Department of Agriculture appears in the section *The Department of Agriculture* in Chapter VIII, Part 1—*Primary Production.*

CHAPTER V — *continued*

PART 3 – HEALTH SERVICES, HOSPITALS AND HOMES FOR THE AGED

HEALTH SERVICES

The Commonwealth and State Government health authorities, together with Boards of Health under local government administration, co-operate in maintaining health services and in the prevention and control of infectious diseases in Western Australia.

The Commonwealth Department of Health administers the National Health Services in this State and is responsible for quarantine, where necessary, of persons, animals and plants entering Western Australia from overseas. It conducts a Health Laboratory at Kalgoorlie where miners undergo periodical examinations for silicosis and other industrial diseases, and also an Acoustics Laboratory at Perth where persons under 21 years of age and ex-servicemen with defective hearing may obtain specialist advice and hearing aids without charge. Further information relating to the National Health Services appears in Part 5 of this Chapter.

The State Department of Health is concerned primarily with the prevention and control of infectious diseases. It is also responsible for the enforcement of sanitation, building and pure food standards, certain of these activities being undertaken in conjunction with the Local Boards of Health.

The Health Education Council is established as a statutory body under the provisions of the Health Education Council Act, 1958–1961. The Council conducts publicity campaigns and public lectures on matters affecting public health, including home accidents, handling of poisons, poliomyelitis and diphtheria immunization and methods to control the common house fly.

The Cancer Council of Western Australia is constituted under the provisions of the Cancer Council of Western Australia Act, 1958 as a statutory body with the functions of co-ordinating, promoting and subsidizing cancer research. The Council absorbed the former Anti-Cancer Council established originally for the purpose of raising funds for the purchase of a linear accelerator which is now installed in a building erected for the purpose adjacent to the Sir Charles Gairdner Hospital at Hollywood. The establishment of this cancer treatment and research unit is part of the plan for a comprehensive medical centre close to the University, to develop the facilities available to the Medical School.

The Department of Public Health has a central laboratory housed in the Sir Charles Gairdner Hospital. At the 31st December, 1963 there were 13 branch laboratories, 12 of which were located at country centres. The principal activity of the laboratories is the examination of medical and public health specimens, but there is increasing emphasis on research, particularly in the fields of virology, salmonellosis, tuberculosis, unclassified mycobacteria, cytology and coronary disease.

Infectious Diseases

A joint campaign of tuberculosis control is conducted by the Commonwealth and State Governments. Under the provisions of the Tuberculosis Act 1948, the Commonwealth reimburses the State for capital expenditure incurred after the 1st July, 1948, and for net maintenance expenditure in excess of that of the base year 1947–48. In addition, the Commonwealth Government pays allowances to tuberculosis sufferers and their dependants, as set out in Part 5 of this Chapter. Western Australia, like the other States, carries out the actual work of diagnosis and treatment. Under the Health Act, 1911–1962 (State), all persons in Western Australia who are over the age of fourteen years may be required to undergo X-ray examinations, which are conducted by the mobile units of the Tuberculosis Control Branch and at its Perth and Fremantle Chest Clinics.

Poliomyelitis, diphtheria and trachoma are other notifiable diseases which have received special attention during recent years. Epidemics of poliomyelitis occurred in 1948, 1954 and during the early months of 1956. Immunization of children with Salk vaccine supplied by the Commonwealth Serum Laboratories began in July, 1956 and by the end of 1962 the full course of three injections had been completed by 211,000 children. Mass immunization of adults commenced in May, 1958 and, by the end of 1962, 244,000 had completed the full course. The incidence of poliomyelitis in Western Australia since 1956 has been negligible.

Although leprosy and trachoma are endemic among the aboriginal natives of the Kimberley Division in the far north of the State, cases are with few exceptions confined to the native population. The State Department of Public Health and the Northern Territory Medical Service co-operate in the control of these diseases.

The incidence of notifiable infectious diseases other than venereal diseases during each year from 1958 to 1962 is shown in the following table.

INFECTIOUS DISEASES NOTIFIABLE IN WESTERN AUSTRALIA—CASES REPORTED

Disease	1958	1959	1960	1961	1962
Ankylostomiasis	1	1			15
Breast Abscess (*a*)			21	10	9
Brucellosis		8	7	5	6
Chorea	1	2	3		
Dengue Fever		1			
Diphtheria	24	48	5	15	17
Dysentery	123	190	114	124	182
Eclampsia (*a*)			7	2	
Encephalitis, Acute Infectious				2	
Erythema Nodosum	2	1	1		
Hepatitis, Infective	396	142	256	262	115
Hydatid Disease			1		1
Infantile Diarrhoea	12	26	30	48	49
Lead Poisoning	1	2	2	1	1
Leprosy (*b*)	38	18	18	15	17
Leptospirosis		2	9	13	7
Malaria	2	3	4	2	3
Meningococcal Infection	9	3	4	2	2
Ornithosis			2	2	
Paratyphoid Fever	2		4	6	1
Pleural Effusion	5	11	14	12	5
Poliomyelitis, Acute	1	3	7	3	6
Puerperal Fever	1	3	1	3	
Purulent Ophthalmia	30	50	67	29	29
Rheumatism, Acute	21	15	14	10	9
Rubella	3,059	221	127	264	106
Salmonella Infections	45	40	28	43	61
Scarlet Fever	190	60	38	45	30
Tetanus	11	5	8	5	1
Trachoma (*b*)	364	1,149	437	369	377
Tuberculosis—					
Pulmonary	350	309	282	197	238
Other	24	34	34	41	25
Typhoid Fever	22	8	1	4	5
Typhus Fever (Brill's Disease)	5	6		4	

(*a*) Made notifiable in 1959. (*b*) Aboriginals account for practically all of these cases.

Under the Health Act, 1911–1962, the State Commissioner of Public Health may compel any person believed to be suffering from venereal disease to undergo examination by a medical practitioner. Any person who is aware or suspects that he is suffering from venereal disease is required to consult a medical practitioner and, if found to be infected, must continue treatment until a certificate of cure is issued. Clinics for the treatment of venereal diseases are conducted by the Department of Public Health at Royal Perth Hospital and Fremantle Hospital.

The following table shows the number of cases of venereal disease reported to the Department during each year from 1958 to 1962.

CASES OF VENEREAL DISEASE NOTIFIED

Disease	1958	1959	1960	1961	1962
Syphilis—					
Primary	2	3	1	6	6
Secondary		2	3	2	2
Tertiary	3	3	2	9	7
Congenital					1
Total Syphilis	5	8	6	17	16
Gonorrhoea	148	72	87	119	283
Chancroid	1	1			
Grand Total	154	81	93	136	299

Special Health Services for Children

In addition to measures provided for immunization against poliomyelitis, diphtheria and other infectious diseases, Infant Health Services and Schools Medical and Dental Services assist in maintaining the general health of children in Western Australia.

Infant Health Centres have been established throughout the State to advise mothers concerning the care of infants. Expectant mothers are also assisted in this way and country mothers who are unable to attend a Correspondence Nursing Scheme.

INFANT HEALTH CENTRES AND CORRESPONDENCE NURSING SCHEME

Particulars	1958	1959	1960	1961	1962
Infant Health Centres—					
Number of :					
Centres	59	61	63	67	73
Attendances of Infants	218,134	229,431	221,619	230,764	237,300
Visits to Households	23,330	*22,216	*22,068	23,414	23,959
Correspondence Nursing Scheme—					
Number of :					
Infants on Roll	921	1,000	1,001	1,288	1,205
Letters Received	826	1,022	1,226	1,307	1,228
Letters Dispatched	3,930	4,495	4,730	4,926	5,378
	1958–59	1959–60	1960–61	1961–62	1962–63
Receipts and Payments (*a*)—	£	£	£	£	£
Receipts :					
Government Aid	71,935	84,625	103,100	116,600	123,602
Local Government Aid	2,709	1,988	1,916	4,531	1,846
Lotteries Commission Grants	5,350	5,350	5,350	2,675	5,350
Total	79,994	91,963	110,366	123,806	130,798
Payments :					
Salaries and Wages	61,320	71,302	88,462	100,943	107,454
Travelling Expenses, etc.	18,674	20,661	21,408	22,977	23,645
Total	79,994	91,963	109,870	123,920	131,099

(*a*) Infant Welfare Centres Trust Account only. Particulars of receipts and expenditure of local committees (*e.g.* certain expenditure on buildings and motor vehicles) are not available. * Revised.

It is estimated that three out of every four infants in the State are taken to a Centre at least once in the first year of life. Infant Health Sisters also visit remote areas of the State and interview mothers who are normally dependent on advice given by correspondence.

The Schools Medical Services provide for the examination of each child twice during his school life. In addition, a teacher who at any time observes symptoms of illness in a child may refer the matter for attention by a medical practitioner. Parents are notified of physical defects found during medical examinations and, where a condition needs home supervision, are advised of the action required. Dental defects, ear, nose and throat affections and defective vision are most frequently reported.

The Schools Dental Services operate mainly in the country, where private dental treatment may not be readily available. Because of limited staff, dental examinations of school children can be repeated only at fairly long intervals, at best about once every two years. Accordingly, in the larger schools, attention is concentrated on the younger children, but at smaller schools all children are examined. Parents are notified of dental treatment required and may have the work done by private dentists or may consent to their children being treated without charge by the schools dentists.

HOSPITALS OTHER THAN MENTAL HOSPITALS

Commonwealth Government Hospitals

The Repatriation General Hospital, Hollywood is established for the purpose of providing free medical treatment for ex-servicemen in respect of disabilities which have been accepted as due to war service. Widows and children of deceased ex-servicemen and widowed mothers of deceased unmarried ex-servicemen whose deaths have been accepted as due to war service may also receive free medical treatment.

Serving members of the armed forces of Australia are treated at the Hospital, the cost of treatment being met by the appropriate service Department. Treatment is also provided for British, Canadian, New Zealand and certain other ex-servicemen, expenses being paid by the country concerned.

The Edward Millen Home is also a Repatriation Department hospital, which provides treatment for ex-servicemen suffering from tuberculosis.

State Government and Government-Assisted Hospitals

For administrative purposes, a hospital under the direct control of the Medical Department is classified as " departmental " and is financed from State funds. On the other hand, a " Board " hospital has its own board of management and is subsidized by the State Government.

Five large metropolitan hospitals, comprising Royal Perth Hospital, Fremantle Hospital, Princess Margaret Hospital for Children, Sir Charles Gairdner Hospital and King Edward Memorial Hospital for Women, are Board hospitals. Other Board hospitals in the metropolitan area are the Home of Peace, which is the State's main hospital for the incurable, and the Perth Dental Hospital, which incorporates a training school for dentists. In addition, 39 departmental and 46 Board hospitals were located throughout the State at the 30th June, 1962.

DEPARTMENTAL AND BOARD HOSPITALS (*a*)

Particulars	At 30th June :				
	1958	1959	1960	1961	1962
Number of Hospitals—					
Departmental	37	38	39	39	39
Board	56	55	54	52	52
Total	93	93	93	91	91
Medical Staff—					
Visiting	*322	*331	*336	356	350
Salaried	*108	*112	*124	137	143
Total	*430	*443	*460	493	493
Nursing Staff—					
Matrons	97	105	106	102	110
Nurses	569	674	725	970	954
Trainees	1,193	1,259	1,370	1,199	1,226
Nursing Assistants	879	876	816	944	1,017
Total	2,738	2,914	3,017	3,215	3,307
Beds and Cots—					
In Departmental Hospitals	1,703	1,942	1,886	1,809	2,140
In Board Hospitals :					
Metropolitan	1,552	1,481	1,557	1,655	1,641
Country	1,063	1,166	1,062	1,126	1,141
Total	4,318	4,589	4,505	4,590	4,922

(*a*) Excluding Perth Dental Hospital. * Revised.

The following table gives details of the activities of departmental and Board hospitals during the five years ended 30th June, 1962.

PATIENTS TREATED IN DEPARTMENTAL AND BOARD HOSPITALS

Particulars	Year ended 30th June :				
	1958	1959	1960	1961	1962
In-patients—					
Number at beginning of year—					
Males	1,336	1,444	1,398	1,461	1,315
Females	1,407	1,487	1,541	1,595	1,667
Admissions—					
Males	38,652	39,762	40,770	41,369	44,103
Females	45,200	46,876	47,937	48,980	53,058
Discharges—					
Males	37,148	38,413	39,346	40,216	42,841
Females	44,207	45,884	46,937	47,906	52,070
Deaths—					
Males	1,396	1,395	1,361	1,299	1,289
Females	913	938	946	1,002	1,062
Number at end of year—					
Males	1,444	1,398	1,461	1,315	1,288
Females	1,487	1,541	1,595	1,667	1,593
Total	2,931	2,939	3,056	2,982	2,881
Average daily number	2,748	2,847	2,913	2,948	3,059
Out-patients—Total attendances	382,729	356,339	371,516	409,077	396,106

Departmental and Board hospitals collect fees from patients able to pay for treatment, and receive Commonwealth hospital benefit payments provided under Part V of the National Health Act 1953–1962, but are financed mainly from State Government funds.

The effect of the marked rise in costs experienced by all hospitals in recent years is reflected in the following table, which shows the receipts and payments of departmental and Board hospitals. Although fees have been greatly increased, these hospitals have become more and more dependent on assistance from the State.

RECEIPTS AND PAYMENTS OF DEPARTMENTAL AND BOARD HOSPITALS

Particulars	Year ended 30th June :				
	1958	1959	1960	1961	1962
	£	£	£	£	£
Receipts—					
From Government Funds	5,918,778	5,834,421	6,770,328	7,401,388	7,961,695
Local Government Aid	89	6,705	1,434	222	522
Public Subscriptions, Legacies, etc.	249,269	116,276	70,279	108,389	270,966
Fees	1,358,782	1,521,822	1,795,864	2,298,575	2,756,883
Other	49,791	64,289	31,219	32,607	61,864
Total	7,576,709	7,543,513	8,669,124	9,841,181	11,051,930
Payments—					
Salaries and Wages	3,376,316	3,747,569	4,342,103	4,984,907	5,455,362
Maintenance of Buildings and Grounds	565,192	415,260	553,452	296,092	489,010
Other Maintenance	1,946,556	2,174,082	2,353,689	2,856,731	2,942,788
Capital Expenditure	1,639,529	1,173,355	1,571,152	1,843,032	2,391,371
Total	7,527,593	7,510,266	8,820,396	9,980,762	11,278,531

As previously indicated, the control of tuberculosis is chiefly a State Government activity, supported by Commonwealth subsidies and carried out under the direction of the Commissioner of Public Health. The principal institution for the treatment of tuberculosis is the Sir Charles Gairdner Hospital at Hollywood which was opened in 1958 as the Perth Chest Hospital.

There is a leprosarium for the treatment of aboriginal natives at Derby and a small lazaret at Wooroloo for other patients.

Private Hospitals

In addition to the government hospitals there are a number of private general and maternity hospitals, which are registered and inspected by the Department of Public Health. The principal private hospitals are those established by religious bodies in the metropolitan area and the main country towns. These include the Hospitals of Saint John of God at Subiaco, Belmont, Bunbury, Geraldton, Kalgoorlie and Northam ; Saint Anne's, Mt. Lawley ; the Mount Hospital, Perth and the Hillcrest Maternity Hospital, North Fremantle.

Private hospitals collect fees from patients and receive Commonwealth hospital benefit payments provided under Part V of the National Health Act, 1953–1962. At the 30th June, 1962 there were 85 private hospitals in Western Australia approved for payment of hospital benefits under the Act. These hospitals had a total bed capacity of 2,381 at that date and the average daily number of resident patients during 1961–62 was 1,839.

MENTAL INSTITUTIONS

The Mental Health Act, passed by the State Parliament in 1962, consolidates and amends the law relating to the treatment of mental disorder, and repeals the Lunacy Act, the Inebriates Act, the Mental Treatment Acts and the Mental Treatment (War Service Patients) Act. At the 31st December, 1963 the date of operation of the Mental Health Act had not been proclaimed.

The Lunacy Act, 1903–1954 and the Mental Treatment Act, 1927–1956 provide for compulsory admission to mental hospitals. Admission is usually made after application to a magistrate, supported by the certification of two medical practitioners. The Acts provide also for voluntary admissions. Adults may submit themselves for treatment in a mental hospital and children may be admitted on the application of parents or guardians. There are special provisions for the committal of persons from courts and prisons to mental hospitals for observation or treatment.

Except in the case of a person committed from a court or a prison, inmates of mental institutions may be released on trial leave or discharged by the medical superintendent or on the recommendation of a Board of Visitors. Voluntary patients may leave an institution after 24 hours' notice.

All mental hospitals in Western Australia are administered by a Director of Mental Health Services responsible to the Minister for Health. Four hospitals provide for patients certified as insane, the principal institution being the Claremont Mental Hospital. The Heathcote Reception Hospital is for patients who are suffering from nervous or mental disorders but who have not been certified as insane. A Board

of Visitors for each institution makes regular inspections and reports to the Minister on the general welfare of patients and the administration of the institution.

Other institutions of the Mental Health Services authority are the Nathaniel Harper Homes, the Havelock Out-patient Clinic, the Graylands Day Hospital and the Child Guidance Clinic. The Nathaniel Harper Homes are at Guildford and care for mentally handicapped children, the number of inmates at the 31st December, 1962 being 53. Havelock Clinic functions as a preventive and therapeutic psychiatry centre. During 1962, the number of patients treated at the Clinic was 2,142. Graylands Day Hospital admits voluntary patients with mental disorders which require hospital treatment, but which permit patients to spend nights and week-ends at home. The Child Guidance Clinic carries out preventive, diagnostic and therapeutic work on an out-patient basis.

The treatment of inebriates as provided for by the Inebriates Act, 1912-1919 is also a function of the Mental Health Services administration. A magistrate may commit an inebriate to a mental hospital for treatment in accommodation set aside for the purpose. At the 31st December, 1962 there were 19 patients who had been admitted to these institutions under the Act.

The following table shows particulars of the inmates of the four hospitals which admit patients certified as insane. The figures refer mainly to certified patients but include also voluntary patients who, however, represent a small proportion of the total, there being only 79 voluntary patients out of a total of 1,949 under care at the 31st December, 1962. Patients admitted under the Inebriates Act are not included.

PATIENTS OF MENTAL HOSPITALS

Particulars	1958		1959		1960		1961		1962	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Admissions and Readmissions	192	121	191	151	181	120	165	79	171	95
Discharges—										
Recovered	1	1			8	1	1	1	3	
Relieved	47	29	79	31	86	67	74	75	81	47
Not improved	14	7	24	2	17	6	17	4	10	10
Not insane			2		1		1		2	
Deaths	65	68	85	79	64	46	63	44	53	46
Total	127	105	190	112	176	120	156	124	149	103
Number remaining at 31st December—										
In hospital	998	711	971	696	987	708	979	677	982	680
On trial leave	89	128	117	182	106	170	123	156	142	145
Total	1,087	839	1,088	878	1,093	878	1,102	833	1,124	825

Details of patients of the Heathcote Reception Hospital during each year from 1958 to 1962 are shown in the next table.

PATIENTS OF HEATHCOTE RECEPTION HOSPITAL (*a*)

Particulars	1958		1959		1960		1961		1962	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Admissions and Readmissions	512	472	590	527	593	535	573	562	735	669
Discharges—										
Recovered	135	236	268	304	350	337	111	218	126	220
Relieved	215	147	161	153	118	140	278	271	424	380
Not improved	82	35	62	23	73	23	93	22	87	30
Deaths	3	2	4	3	3	4	1	2	1	2
Transfers to other Mental Hospitals	79	40	70	42	56	32	90	37	93	48
Total	514	460	565	525	600	536	573	550	731	680
Number remaining at 31st December—										
In hospital	49	56	49	48	38	36	43	43	46	35
On leave	54	81	79	91	83	102	78	107	11	21
Total	103	137	128	139	121	138	121	150	57	56

(*a*) Prior to 1962, figures for patients remaining at the end of each year include those on trial leave. For 1962, patients leaving the hospital on trial leave are counted as discharges; numbers of patients on leave comprise only those on daily leave.

HOMES FOR THE AGED AND INFIRM

The principal government homes for the aged and infirm in Western Australia are "Sunset" at Dalkeith, "Mount Henry" near Canning Bridge and "Woodbridge" at Guildford. There are also several homes for the aged conducted by religious and charitable organizations.

The following table shows particulars of inmates of the State Government institutions during the five years ended 30th June, 1962.

GOVERNMENT HOMES FOR THE AGED AND INFIRM

Particulars	Year ended 30th June:				
	1958	1959	1960	1961	1962
Inmates at beginning of year—					
Males	483	458	432	451	451
Females	427	431	442	449	424
Admissions—					
Males	295	252	280	302	278
Females	164	125	107	121	141
Discharges—					
Males	180	79	104	136	123
Females	53	34	20	56	45
Deaths—					
Males	140	199	157	166	160
Females	107	80	80	90	92
Inmates at end of year—					
Males	458	432	451	451	446
Females	431	442	449	424	428
Total	889	874	900	875	874

CHAPTER V—*continued*

PART 4—HOUSING

HOUSING AND THE CENSUS

NOTE—Dwellings occupied solely by full-blood aboriginals are excluded from all tables in this Part which contain information compiled from census schedules (*see* also letterpress relating to *Aboriginals* in the final section of Chapter IV, Part 1—*Population*).

Details relating to the Census of 30th June, 1961 are subject to minor amendment.

For the purpose of the census, an " occupied dwelling " is any habitation occupied by a household group living together as a domestic unit, whether comprising the whole or only part of a building. The term has therefore a very wide reference and includes, in addition to houses and flats, a great variety of dwellings ranging from a single-roomed shack to a multi-roomed hotel or institution.

The term " unoccupied dwellings " is not synonymous with vacant houses and flats available for sale or renting. While these are included, the figures refer also to dwellings, including those used for week-end and holiday purposes, whose usual occupants were temporarily absent on the night of the Census. Newly-completed dwellings whose owners or tenants had not entered into occupation on the night of the Census are also included.

Dwellings According to Class

Occupied dwellings are classified into private dwellings and other dwellings. " Private Dwellings " comprise private houses ; shares of private houses ; flats ; apartments, rooms, and the like. " Dwellings other than Private " include such habitations as hotels, boarding houses, lodging houses, hostels, hospitals, educational, religious and charitable institutions, defence and penal establishments.

" Private Houses " include houses, sheds, huts, garages, etc. used for dwelling purposes, and shared private houses for which only one Householder's Schedule was received. " Share of Private House " is that portion of a shared private house which is occupied separately and for which a separate Householder's Schedule was furnished. " Flat " is any part of a house or other building which can be completely closed off and which has its own cooking and bathing facilities. " Other " private dwellings include dwellings such as apartments, rooms, etc., which are parts of buildings but are not self-contained units.

The following table shows the number of occupied dwellings in Western Australia according to class of dwelling at the Censuses of 1954 and 1961. Private houses constituted 93·5 per cent. of all occupied private dwellings in 1961 compared with 90·8 per cent. in 1954. The proportion of flats to total occupied private dwellings increased from 3·3 per cent. in 1954 to 4·5 per cent. at the 30th June, 1961.

DWELLINGS ACCORDING TO CLASS

Class of Dwelling	Census of 30th June :— 1954	1961
Occupied Private Dwellings—		
Private House—		
House	140,383	175,495
Shed, Hut, etc.	4,480	3,641
Total, Private Houses	144,863	179,136
Share of Private House	7,487	2,788
Flat	5,257	8,672
Other	1,889	1,020
Total—Private Dwellings	159,496	191,616
Occupied Dwellings other than Private—		
Boarding House, Private Hotel, Motel, etc.	1,594	1,089
Licensed Hotel	445	451
Educational, Religious or Charitable Institution	216	*225
Other	(a) 1,072	*936
Total—Other Dwellings	3,327	2,701
GRAND TOTAL—OCCUPIED DWELLINGS	162,823	194,317
Unoccupied Dwellings	6,614	*13,705

(a) Includes " caretakers' quarters " which in 1961 were classified as private dwellings. * Revised.

Dwellings According to Material of Outer Walls

Brick was found to be the most frequently used material for outer walls at the 30th June, 1961, being used in 43·8 per cent. of all occupied private dwellings where the material of outer walls was stated, compared with 38·2 per cent. in 1954. Wood, second in importance as a material for outer walls in 1954, fell to third place, after fibro-cement, in 1961. Of those private dwellings where the material of outer walls was stated, 30·2 per cent. in 1961 had outer walls of fibro-cement and 16·7 per cent. had outer walls of wood, compared with 23·1 per cent. and 25·5 per cent. respectively in 1954. The proportion of private dwellings with walls of iron dropped from 5·5 per cent. in 1954 to 3·5 per cent. in 1961. The highest percentage increases between the Censuses were recorded by occupied private dwellings with walls of fibro-cement, 57·6 per cent., and of brick, 37·7 per cent. The number of occupied private dwellings with walls of iron, wood or stone decreased by 22·8 per cent., 21·4 per cent. and 15·4 per cent. respectively.

OCCUPIED PRIVATE DWELLINGS CLASSIFIED ACCORDING TO MATERIAL OF OUTER WALLS

Material of Outer Walls	Census, 30th June, 1954					Census, 30th June, 1961				
	Private House (a)	Share of Private House	Flat	Other	Total	Private House (a)	Share of Private House	Flat	Other	Total
Brick	52,183	3,711	3,637	1,250	60,781	75,006	1,466	6,579	656	83,707
Stone	3,702	360	181	154	4,397	3,319	108	238	53	3,718
Concrete	4,313	143	87	3	4,546	4,858	75	156	5	5,094
Wood	37,998	1,909	564	216	40,687	30,899	494	474	109	31,976
Iron	8,409	175	105	99	8,788	6,546	40	153	43	6,782
Fibro-cement	34,778	1,128	663	158	36,727	56,097	586	1,043	148	57,874
Other	3,286	48	17	9	3,360	2,141	16	19	3	2,179
Not Stated	194	13	3		210	270	3	10	3	286
Total	144,863	7,487	5,257	1,889	159,496	179,136	2,788	8,672	1,020	191,616

(a) Includes Sheds, Huts, etc.

Dwellings According to Number of Inmates

The greatest proportional increase (39·1 per cent.) since 1954 occurred in occupied private dwellings with one inmate, due to an increase of 39·8 per cent. in the number of private houses with one inmate and an increase of 144·8 per cent. in the number of flats with one inmate. At the 30th June, 1961, dwellings with less than six inmates represented 85·6 per cent. of total occupied private dwellings compared with 85·9 per cent. in 1954. Dwellings with six or more inmates increased by 22·1 per cent. between the Censuses while those with less than six increased by 19·8 per cent. Dwellings with two inmates were the most numerous in 1961 and 1954, accounting for 22·9 per cent. and 21·5 per cent. respectively of total occupied private dwellings.

OCCUPIED PRIVATE DWELLINGS CLASSIFIED ACCORDING TO NUMBER OF INMATES

Number of Inmates per Dwelling	Census, 30th June, 1954					Census, 30th June, 1961				
	Private House (a)	Share of Private House	Flat	Other	Total	Private House (a)	Share of Private House	Flat	Other	Total
1	11,310	1,307	1,074	601	14,292	15,815	874	2,629	559	19,877
2	29,094	2,510	2,064	674	34,342	39,207	861	3,630	271	43,969
3	28,825	1,683	1,025	340	31,873	32,519	452	1,302	98	34,371
4	31,425	1,038	598	153	33,214	37,066	277	633	45	38,021
5	22,341	527	298	72	23,238	27,327	188	309	27	27,851
6	12,031	247	122	20	12,420	15,300	78	105	11	15,494
7	5,519	104	47	13	5,683	6,811	33	44	7	6,895
8	2,535	42	17	12	2,606	3,075	16	15		3,106
9	995	15	7	1	1,018	1,085	8	4		1,097
10	424	10	2	1	437	509	1			510
11 and over	364	4	3	2	373	422		1	2	425
Total—Dwellings	144,863	7,487	5,257	1,889	159,496	179,136	2,788	8,672	1,020	191,616
Average Number of Inmates per Dwelling	3·74	2·80	2·56	2·27	3·64	3·69	2·48	2·19	1·82	3·59

(a) Includes Sheds, Huts, etc.

Dwellings According to Number of Rooms

At the 30th June, 1961, occupied private dwellings of four, five and six rooms accounted for 80·5 per cent. of all occupied private dwellings where the number of rooms was stated. In 1954 the proportion was 75·7 per cent. In both 1961 and 1954 private dwellings with five rooms were the most numerous and represented 37·8 per cent. and 30·6 per cent. respectively of private dwellings where the number of rooms was stated. The greatest proportional increases in the number of occupied private dwellings since the 1954 Census occurred in five and seven roomed private dwellings which increased by 48·3 per cent. and 38·6 per cent. respectively. There were notable increases since 1954 in the number of flats with two and three rooms, the increases being 198·7 per cent. and 77·1 per cent. respectively.

OCCUPIED PRIVATE DWELLINGS CLASSIFIED ACCORDING TO NUMBER OF ROOMS (*a*)

Number of Rooms (*a*) per Dwelling	Census, 30th June, 1954					Census, 30th June, 1961				
	Private House (*b*)	Share of Private House	Flat	Other	Total	Private House (*b*)	Share of Private House	Flat	Other	Total
1	2,734	902	31	673	4,340	1,756	201	93	251	2,301
2	4,566	1,698	384	620	7,268	2,455	592	1,147	296	4,490
3	8,736	1,640	1,561	334	12,271	6,240	842	2,764	283	10,129
4	38,176	1,262	1,943	133	41,514	37,390	605	2,890	112	40,997
5	46,781	898	905	48	48,632	70,540	393	1,143	32	72,108
6	29,162	570	296	19	30,047	40,177	66	403	8	40,654
7	9,262	191	87	16	9,556	13,124	15	107	3	13,249
8	3,120	68	24	12	3,224	4,315	5	50	1	4,371
9	1,071	32	7	5	1,115	1,486	1	29		1,516
10	450	4	2	4	460	628	5	2		635
11 and over	425	2	2	2	431	476	2	3	3	484
Not Stated	380	220	15	23	638	549	61	41	31	682
Total—Dwellings	144,863	7,487	5,257	1,889	159,496	179,136	2,788	8,672	1,020	191,616
Average Number of Rooms per Dwelling (*a*)	4·91	3·36	3·90	2·21	4·77	5·15	3·27	3·69	2·45	5·04

(*a*) Includes kitchen and permanently enclosed sleep-out, but does not include bathroom, pantry, laundry, or storehouse.
(*b*) Includes Sheds, Huts, etc.

Dwellings According to Nature of Occupancy

The most significant feature of the following table is the increase in the number of occupied private dwellings being purchased by instalments. Of those occupied private houses where the nature of occupancy was stated, the proportion being purchased by instalments rose from 15·7 per cent. in 1954 to 24·8 per cent. in 1961. The proportion of owner-occupied dwellings declined from 50·7 per cent. in 1954 to 46·6 per cent. in 1961. The proportion of tenanted dwellings also declined, from 32·2 per cent. to 27·7 per cent.

OCCUPIED PRIVATE DWELLINGS CLASSIFIED ACCORDING TO NATURE OF OCCUPANCY

Nature of Occupancy	Census, 30th June, 1954					Census, 30th June, 1961				
	Private House (*a*)	Share of Private House	Flat	Other	Total	Private House (*a*)	Share of Private House	Flat	Other	Total
Owner	77,548	2,083	666	123	80,420	86,926	886	982	77	88,871
Purchaser by Instalments	22,573	421	60	22	23,076	44,255	206	118	19	44,598
Tenant (*b*)	40,032	4,792	4,450	1,700	50,974	43,077	1,612	7,315	891	52,895
Caretaker	1,890	65	47	27	2,029	1,994	22	163	14	2,193
Other Methods of Occupancy	1,951	62	19	8	2,040	1,999	19	72	6	2,096
Not Stated	869	64	15	9	957	885	43	22	13	963
Total	144,863	7,487	5,257	1,889	159,496	179,136	2,788	8,672	1,020	191,616

(*a*) Includes Sheds, Huts, etc. (*b*) Includes dwellings occupied by " Tenants (Governmental Housing) " in 1954 and by " Tenants (State Housing Commission) " in 1961.

Occupied Tenanted Private Dwellings According to Weekly Rent (Unfurnished)

The following table shows particulars of rents paid for *unfurnished* private dwellings. Many dwellings were occupied on a furnished basis, and this accounts largely for the high proportion of tenanted private dwellings for which an *unfurnished* rental could not be stated.

OCCUPIED TENANTED PRIVATE DWELLINGS (†) CLASSIFIED ACCORDING TO WEEKLY RENT (UNFURNISHED)

Weekly Rent (Unfurnished)	Census, 30th June, 1954					Census, 30th June, 1961				
	Private House (*a*)	Share of Private House	Flat	Other	Total	Private House (*a*)	Share of Private House	Flat	Other	Total
Under 20s.	4,293	210	36	78	4,617	2,477	27	116	36	2,656
20s. and under 30s.	4,643	433	146	61	5,283	2,524	61	138	21	2,744
30s. ,, ,, 40s.	4,874	437	347	62	5,720	2,194	66	161	32	2,453
40s. ,, ,, 50s.	3,660	441	212	88	4,401	3,269	140	191	45	3,645
50s. ,, ,, 60s.	2,384	295	196	70	2,945	2,401	101	205	22	2,729
60s. ,, ,, 70s.	1,903	244	259	53	2,459	3,005	131	266	38	3,440
70s. ,, ,, 80s.	712	107	186	26	1,031	2,484	63	261	29	2,837
80s. ,, ,, 90s.	566	88	231	12	897	1,960	48	292	16	2,316
90s. ,, ,, 100s.	240	25	178	6	449	1,209	33	374	4	1,620
100s. and over	711	74	344	23	1,152	3,196	59	1,864	19	5,138
Not Stated (*b*)	8,034	2,364	2,049	1,202	13,649	8,093	856	2,749	616	12,314
Total	32,020	4,718	4,184	1,681	42,603	32,812	1,585	6,617	878	41,892

(†) Excludes particulars of dwellings occupied by " Tenants (Governmental Housing) " in 1954 and by " Tenants (State Housing Commission) " in 1961. (*a*) Includes Sheds, Huts, etc. (*b*) Includes tenanted dwellings which were rent-free, those rented on a furnished basis, and those for which the rents were not applicable (*e.g.*, for shop and dwelling combined).

Of those tenanted private dwellings for which rent (unfurnished) was stated, 38·9 per cent. had rentals below 50s. in 1961 compared with 69·1 per cent. in 1954. In the range 50s. and under 100s. the proportion rose from 26·9 per cent. in 1954 to 43·7 per cent. in 1961. The proportion in the category 100s. and over rose from 4·0 per cent. in 1954 to 17·4 per cent. in 1961. The greatest number of tenanted private houses at the 30th June, 1961 were in the rental range 40s. and under 50s. while the greatest number of tenanted flats were in the range 100s. and over.

Unoccupied Dwellings

Of the total of 13,705 dwellings unoccupied at the 30th June, 1961 more than one-third (4,911) were in the category of holiday or week-end home or seasonal workers' quarters, 3,541 were dwellings whose usual occupants were temporarily absent, 2,538 were available for sale or renting, and 310 had been condemned or were due to be demolished.

GOVERNMENT AND GOVERNMENT-SPONSORED HOUSING

State Housing Commission

The State Housing Commission was established in January, 1947 under the State Housing Act of 1946 to replace the Workers' Homes Board which had been created in 1912 to " erect and dispose of workers' dwellings, and to make advances to people of limited means to provide homes for themselves." The Act confers on the Commission the legal authority formerly vested in the Board and has as its objects " the improvement of existing housing conditions " and " the provision of adequate and suitable housing accommodation for persons of limited means and certain other persons not otherwise adequately housed." The legislation is comprehensive in scope, providing for the erection of homes for workers, the making of advances to workers for the purchase of homes, the erection of homes for letting on a weekly rental basis, the acquisition and development of land, the clearing of slums, the erection of hostels and the planning of community facilities.

The Commission consists of seven members of whom two must be officers of the State Public Service, one a representative of the building trades unions, one a registered builder (or a person qualified to be so registered), one a woman, one a discharged member of the Forces, and one a person with a wide knowledge of and experience in housing conditions in the State. Government housing is primarily the responsibility of the Commission, whose functions include the construction and the letting and sale of dwellings

under the authority of the State Housing Act, and the administration of the Housing Loan Guarantee Act (State) and of the Commonwealth and State Housing Agreements and the War Service Homes Act (Commonwealth) as they apply to Western Australia.

Operations under the State Housing Act—Under the authority of the State Housing Act, 1946–1961, the State Housing Commission uses funds provided by the State Government to build dwellings for sale and to lend money for home building. Eligibility for assistance is restricted to persons with income below a prescribed amount, which varies according to movements in the State basic wage, but north of 26°S. latitude the Minister may allow assistance to a family having a higher income. Loans of up to £2,500 (or more, in some cases) may be made on a minimum deposit of 10 per cent. (or less, at the discretion of the Commission), the maximum period of repayment being 45 years. The rate of interest, 5⅝ per cent. from April, 1961, was reduced to 5⅜ per cent. from April, 1962.

Various forms of assistance have been granted to encourage home ownership, including loans secured by mortgage, advances made under contract of sale, advances for acquiring homes under leasehold conditions, second mortgage loans and loans for the completion of partly-built dwellings.

Operations under the Commonwealth and State Housing Agreement—The final draft of an agreement on housing between the Commonwealth and State Governments was prepared at the Conference of Premiers in August, 1945 and was later ratified by Commonwealth and State legislation. The Commonwealth and State Housing Agreement Act, passed by the State Parliament in 1945, enabled Western Australia to participate in the Agreement, the purpose of which was to provide homes quickly, primarily for persons at the lower income levels, by standardization of design and erection in large groups. The Agreement provided a broad basis of collaboration between the Commonwealth and the State, with the Commonwealth providing advances of money, general direction on policy and co-ordination of effort and the State undertaking the actual site acquisition and planning, the construction of the dwellings, the selection of tenants and the detailed administrative work.

Homes built under the Commonwealth and State Housing Agreement Act of 1945 were let at an " economic rent " calculated according to a formula laid down in the Agreement. The rents so determined were to be sufficient to meet repayments by the State to the Commonwealth of the capital cost of each dwelling with interest and also current outgoings such as the cost of maintenance, administration, rates, taxes and insurance. Provision was made for a system of rental rebates so designed that families with income near the basic wage level should pay not more than about one-fifth of the family income in rent, irrespective of the " economic rent " of the dwelling, but in no case was the rent paid by a tenant to be less than 8s. per week. The Commonwealth Government was to bear three-fifths and the State two-fifths of all losses incurred in operations under the Agreement.

Although the principal aim of the arrangement was to make homes available on a rental basis, provision existed for the sale by the State of houses erected under the scheme, on condition that the full capital cost was immediately repaid to the Commonwealth. To satisfy this requirement, the State Housing Commission made use of funds provided by the State Government by means of the State Housing Act when, in 1950, it first offered tenants the option of purchasing their homes by instalments on payment of a moderate deposit. The Commonwealth and State Housing Supplementary Agreement Act, 1955, modified the original Agreement by allowing finance provided by the Commonwealth to be applied for the purchase, by tenants, of houses built under the scheme. The Agreement prescribed a minimum deposit of 5 per cent. of the first £2,000 of the purchase price and 10 per cent. of the balance. The rate of interest specified was 4½ per cent. per annum, subject to alteration by agreement between the Commonwealth and the State, the maximum loan being £2,750 and the maximum period of repayment 45 years.

With the expiry of the 1945 Agreement, the Commonwealth Parliament in 1956 passed the Housing Agreement Act providing " financial assistance to the States for the purpose of housing " for a period of five years ending on the 30th June, 1961. The complementary State legislation authorizing the State Government to enter into the Agreement is the Commonwealth and State Housing Agreement Act of 1956.

The 1956 Agreement required that, for the first two years of its operation, 20 per cent. of the money allocated to the State was to be advanced to building societies and other approved institutions for lending to private persons for the building or purchase of homes, the proportion to be increased to 30 per cent. during the remainder of the period. On the introduction of the Agreement, the State Housing Commission adopted the policy of offering for sale before occupancy one-half of the total number of houses built, the remainder being made available on a rental basis. The proportion has since been varied several times.

Under the provisions of Commonwealth and State legislation passed in 1961 the period of operation of the Commonwealth and State Housing Agreement has been extended for a further five years to the 30th June. 1966. The 1961 Agreement incorporates all the main provisions of the earlier arrangement, with only minor modifications. The requirement that building societies and other approved institutions shall receive 30 per cent. of moneys allocated to a State is continued.

Although Agreements subsequent to that of 1945 make no provision for rebates to tenants unable to pay the full rental, the State Government has continued the system and the cost of rental rebates in 1961–62 was £129,277 and £132,386 in 1962–63.

The McNess Housing Trust—The State Housing Commission carries out free of charge the administrative, technical and other work associated with the operations of the McNess Housing Trust, which was established by a bequest made in 1930 by the late Sir Charles McNess. The Trust has been assisted by allocations from State Government funds and by donations from the Lotteries Commission. The income of the Trust is used to provide homes for aged and infirm persons not able to purchase or acquire a home from their own resources.

Other Operations—The State Housing Commission conducts certain other housing schemes and has completed, or is currently engaged in, other specific projects on behalf of the State Government. Under a " Departmental Homes " scheme, 341 houses were built in the period 1952–53 to 1961–62 for State Government Departments and semi-government authorities. A Government Employees' Housing Scheme was introduced in 1958–59 and, up to the 30th June, 1962, had provided 75 rental houses in country areas. The Commission has also undertaken the erection of flats for occupation by widows and by aged women pensioners, as well as cottage flats for aged married couples. Design and supervision services have been made available free of cost to several private charitable organizations which are developing pensioner housing schemes financed jointly by these organizations and the Commonwealth Government under the Aged Persons Homes Act 1954–1957 (Commonwealth). The Commission built 150 houses for the accommodation of visiting athletes and officials associated with the VII British Empire and Commonwealth Games held at Perth between the 22nd November and the 1st December, 1962. The erection of 100 houses at Bunbury under the provisions of the Laporte Industrial Factory Agreement Act, 1961 has been made the responsibility of the Commission.

Housing Units Completed—Statistics of housing units built by the State Housing Commission during the period 1957–58 to 1961–62 are given later in this Part in the section *Building Operations*.

War Service Homes

Financial assistance by means of loans is provided by the Commonwealth Government, under the War Service Homes Act 1918–1962, to Australian ex-service personnel of the first and second World Wars, the Korean War and the operations in Malaya. Subject to their having resided in Australia prior to enlistment, other British ex-service personnel are eligible for assistance, which may be extended also to the widow or the dependent widowed mother of a member of the Forces. Loans are made within statutory limits for the building of new homes and arrangements may be made in some circumstances for the discharge of mortgages on existing properties.

The State Housing Commission acts as representative in Western Australia of the War Service Homes Division of the Commonwealth Department of National Development.

CONTROL OF BUILDING

Each of the local government authorities as constituted under the provisions of the Local Government Act, 1960–1962 has power to exercise general control over the erection of buildings in its own district. At the 31st December, 1962 there were 5 City Councils, 15 Town Councils and 125 Shire Councils in Western Australia. The powers of these local government authorities to control building derive from the Town Planning and Development Act and the Local Government Act.

The Town Planning and Development Act, 1928–1962 gives local authorities the right to make by-laws covering such aspects of town planning as the purchase or reservation of land for thoroughfares, the density of dwelling accommodation per acre, the classification of areas for residential, commercial, industrial and recreational use, the prescription of building standards, and the general planning of new subdivisions. Town planning measures proposed by a local authority are subject to the approval of the Minister for Town Planning, who has the advice of a Town Planning Commissioner and a Town Planning Board.

The Local Government Act, 1960–1962 contains provisions for the control of building which are compatible with those exercised under the Town Planning and Development Act but are in a more detailed form. Many local government authorities have adopted comprehensive by-laws relating to building construction, and the erection of all buildings must be carried out in compliance with these by-laws. The Local Government Act provides that no new building or the alteration of an existing building may be begun before the plans have been approved by the local authority. The Governor may by Order, at the request of a local authority, suspend the operation of this provision in its district. Generally, in remote parts of the State prior approval of plans is required only in the case of building in townsite areas. Where any local autbority refuses to approve plans an appeal may be made to the Minister for Local Government, who has the power to modify or reverse the decision of the local authority. Other appeals or matters in dispute in relation to the control of building may be determined only by two referees, one of whom is appointed by the Governor and the other by the local authority concerned.

BUILDING OPERATIONS

Since the end of the second World War, the Australian Statisticians have undertaken a quarterly collection of statistics of building operations. The first of these collections in Western Australia related to the quarter ended 30th September, 1945.

The survey covers the activities of building contractors who undertake the construction of new buildings ; the building operations of Commonwealth, State, semi-government and local government authorities ; and work performed by owner-builders.

An owner-builder is one who is actually building his own house, or is having his house built under his own direction without the services of a contractor responsible for the whole job. Details of owner-builder activity cover in the main only those areas subject to building control by a local government authority. For this reason some building in areas not subject to control, as for instance on farms and stations, is not included, but this omission does not materially affect the figures.

Minor alterations and additions as well as renovations and repairs are excluded.

The following tables relate only to dwellings, as distinct from offices, factories, shops (without dwellings) and other non-residential buildings. The term " contract-built," as used in the first of these tables, refers to the operations of all building contractors and government instrumentalities undertaking the erection of new buildings. The values shown exclude the value of land and represent the estimated value of dwellings on completion. The figures for houses exclude temporary dwellings as well as dwellings attached to other buildings, such as dwellings attached to shops.

NEW HOUSES COMPLETED (‡)—CLASSIFIED ACCORDING TO MATERIAL OF OUTER WALLS

Year	Brick, Stone, Cement		Wood or predominantly Wood		Fibro-Cement or predominantly Fibro-Cement		Other		Total	
	Number	Value	Number	Value	Number	Value	Number	Value	Number	Value
		£'000		£'000		£'000		£'000		£'000
1957–58—Contract-built	3,503	11,104	9	28	1,409	3,439			4,921	14,571
Owner-built	664	2,379	18	43	588	1,262	5	8	1,275	3,692
Total	4,167	13,483	27	71	1,997	4,701	5	8	6,196	18,263
1958–59—Contract-built	2,925	9,588	24	70	1,388	3,407			4,337	13,065
Owner-built	712	2,517	22	51	769	1,559	6	13	1,509	4,140
Total	3,637	12,105	46	121	2,157	4,966	6	13	5,846	17,205
1959–60—Contract-built	3,615	11,468	6	20	1,144	2,954			4,765	14,442
Owner-built	561	1,953	17	35	650	1,293	4	4	1,232	3,285
Total	4,176	13,421	23	55	1,794	4,247	4	4	5,997	17,727
1960–61—Contract-built	4,023	13,568	6	20	951	2,797	17	10	4,997	16,395
Owner-built	452	1,608	7	10	511	1,029	6	9	976	2,656
Total	4,475	15,176	13	30	1,462	3,826	23	19	5,973	19,051
1961–62—Contract-built	3,972	13,589	71	346	882	2,679	84	71	5,009	16,685
Owner-built	514	1,884	8	16	545	1,141	6	9	1,073	3,050
Total	4,486	15,473	79	362	1,427	3,820	90	80	6,082	19,735

(‡) Includes operations of State Housing Commission ; see separate table on next page.

The following table shows completions of dwellings other than houses. The figures relating to flats refer to individual dwelling-units provided. In the case of dwellings attached to shops, the value of the dwelling(s) is not available separately and the figures shown under this heading are, in fact, the total value of the combined buildings.

OTHER NEW DWELLINGS COMPLETED (*a*)

Year	Dwellings other than Houses							
	Flats		Hotels, Guest-houses, etc.		Dwellings attached to Shops		Total	
	Number	Value	Number	Value	Number	Value	Number	Value
		£'000		£'000		£'000		£'000
1957–58	171	356	11	193	18	74	200	623
1958–59	212	420	8	141	14	49	234	610
1959–60	263	493	19	451	14	64	296	1,008
1960–61	440	790	29	552	5	21	474	1,363
1961–62	265	671	36	602	9	52	310	1,325

(*a*) Includes operations of State Housing Commission; see next table.

Operations of the State Housing Commission

The following table shows the number of housing units completed by the State Housing Commission in various categories during each year from 1957–58 to 1961–62. It also shows the numbers of housing units in connexion with which the Commission provided design and supervisory services free of cost to private charitable organizations.

STATE HOUSING COMMISSION—SUMMARY OF OPERATIONS

Category	Financial Year				
	1957–58	1958–59	1959–60	1960–61	1961–62
Housing Units (‡) Completed—					
State Housing Act	262	321	362	519	396
Commonwealth and State Housing Agreements	1,138	853	* 656	742	873
McNess Housing Trust	12	20	11	41	6
Departmental Homes	7	14	36	53	147
Government Employees' Housing Scheme		10	20	29	16
War Service Homes	966	510	354	276	198
Total	2,385	1,728	1,439	1,660	1,636
Other Activities (*a*)		3			55

(‡) Comprises houses and individual flat units. (*a*) The figures shown represent housing units built by charitable organizations in connexion with which the Commission provided design and supervisory services. * Revised.

DWELLINGS COMPLETED AND POPULATION INCREASE

Examination of the statistics of houses and flats completed in relation to population increases in the several States provides some interesting comparisons. The following table relates to the period between the Censuses of the 30th June, 1954 and the 30th June, 1961. Actual completions and the rate per thousand of population increase are shown for each State and Territory and for Australia as a whole. Percentage figures of population growth during the period are also given.

The ratio which Western Australia's population bore to that of Australia was 7·12 per cent. at the 30th June, 1954 and 7·01 per cent. at the 30th June, 1961. Completions of houses and flats in Western Australia during the period numbered 47,945, representing 8·38 per cent. of the Australian total. The rate of completions, 495 per thousand of population increase, was greater than that of any other State and considerably higher than the rate of 376 for Australia as a whole. Western Australia's population increased during the period by 96,858 or 15·14 per cent., compared with a gain of 16·93 per cent. in the Australian population.

DWELLINGS COMPLETED AND POPULATION—STATES AND TERRITORIES
30th JUNE, 1954 TO 30th JUNE, 1961

State or Territory	Population (*a*)				New Houses and Flats (‡) Completed 1st July, 1954 to 30th June, 1961		
	Census, 30th June :		Increase		Number	Proportion of Australian Total	Per thousand of Population Increase
	1954	1961	Number	Per cent.			
	persons	persons	persons	%		%	
New South Wales	3,423,529	3,917,013	493,484	14·41	206,136	36·02	418
Victoria	2,452,341	2,930,113	477,772	19·48	170,357	29·77	357
Queensland	1,318,259	1,518,828	200,569	15·21	60,292	10·53	301
South Australia	797,094	969,340	172,246	21·61	59,261	10·35	344
Western Australia	**639,771**	**736,629**	**96,858**	**15·14**	**47,945**	**8·38**	**495**
Tasmania	308,752	350,340	41,588	13·47	18,811	3·29	452
Northern Territory	16,469	27,095	10,626	64·52	2,214	0·39	208
Australian Capital Territory	30,315	58,828	28,513	94·06	7,263	1·27	255
Australia	8,986,530	10,508,186	1,521,656	16·93	572,279	100·00	376

(*a*) Exclusive of full-blood aboriginals. (‡) Individual dwelling-units.

CHAPTER V— *continued*

PART 5—SOCIAL BENEFITS, RELIEF PAYMENTS AND CHILD WELFARE

NOTE—The rates and the conditions applying to payment of the several benefits dealt with in this Part are described *as they existed at the 1st January*, 1963. Where variations have occurred since that date, the effect of the changes is summarized in the *Appendix*.

The information given is intended to serve as a general guide to the main provisions relating to social benefits and relief payments provided by the Commonwealth and State Governments. For more complete details of the Commonwealth benefits, reference should be made to the *Official Year Book of the Commonwealth of Australia*.

Social benefits are provided by the Commonwealth Government under a series of Acts, and their payment is financed from a National Welfare Fund established for the purpose. The principal revenue of the Fund was formerly the Social Services Contribution which until 1950–51 was levied as a separate tax upon incomes but is now amalgamated with the normal Income Tax. Since 1952–53, the Fund has been financed by the transfer each year from Consolidated Revenue of an amount sufficient to meet the cost of social services and health benefits for the year.

War and service pensions are paid by the Commonwealth Government from the Consolidated Revenue Fund.

The Social Services Act 1947-1962 provides for the payment of age and invalid pensions, widows' pensions, unemployment and sickness benefits, maternity allowances and child endowment ; the Repatriation Act 1920-1962, for war and service pensions ; and the Tuberculosis Act 1948, for allowances to sufferers from tuberculosis as well as assistance to the States in a national campaign against the disease.

Health services, such as medical, hospital and pharmaceutical benefits, are provided under the National Health Act 1953-1962.

War pensions, child endowment, maternity allowances and health service benefits, other than tuberculosis allowances, are paid regardless of income received from other sources or of property owned by the claimant. These payments do not affect eligibility for other social services benefits.

Age and invalid pensions, widows' pensions and service pensions are subject to a means test in respect of both income and property. Only income is taken into account in assessing eligibility for unemployment and sickness benefits or tuberculosis allowances. Generally, a person receiving a pension or an allowance under one category is ineligible for benefit under any other.

Aboriginal natives of Australia, other than the nomadic or primitive, are eligible for social services benefits on the same conditions as other members of the community.

The State Government makes certain payments for the relief of women and others in necessitous circumstances which in most cases supplement benefits provided by the Commonwealth Government.

SOCIAL SERVICES BENEFITS

Age and Invalid Pensions

Age pensions were first paid on the 1st July, 1909 and invalid pensions on the 15th December, 1910. Pensions are payable subject to a means test which does not, however, apply to invalid pensions paid to blind persons.

The age pension is payable to men aged 65 years and over and to women aged 60 years and over who have resided in Australia continuously for at least 10 years, which need not be immediately prior to the date of claim for a pension. If a person has completed five years' but not 10 years' continuous residence and has lived in Australia for periods which in total exceed 10 years, the period of continuous residence otherwise required is reduced by the total of his periods of residence in Australia in excess of 10 years. Residence in New Zealand or the United Kingdom may be treated as residence in Australia. Certain absences do not affect eligibility.

Invalid pensions are payable to persons aged 16 years and over who have resided in Australia for a continuous period of five years (including certain absences at any time), and who are permanently incapacitated for work to the extent of at least 85 per cent. or are permanently blind. If the incapacity or blindness first occurred outside Australia, except during a temporary absence, a total of 10 years' residence is necessary. If a person has completed five years' but not 10 years' continuous residence and has

lived in Australia for periods which in total exceed 10 years, the period of continuous residence otherwise required is reduced by the total of his periods of residence in Australia in excess of 10 years. Residence in New Zealand or the United Kingdom may be treated as residence in Australia. Certain absences do not affect eligibility.

The maximum rate of pension is £5 5s. per week. The wife of an invalid pensioner or of an age pensioner who is permanently incapacitated for work or permanently blind may be granted a wife's allowance of not more than £2 7s. 6d. per week. Where a pensioner who is an invalid is maintaining children under 16 years of age, a child's allowance of 15s. 0d. per week is paid in respect of the first child and the pension is increased by 10s. per week for each additional child.

If the pensioner pays rent and is deemed to be entirely dependent on his pension, supplementary assistance is payable at the rate of 10s. per week to a single pensioner or to a married pensioner whose spouse does not receive a pension or allowance.

The rate of pension is reducible by the application of a means test in respect of income and property which, for the purposes of assessment, excludes the pensioner's home, furniture and personal effects and some other specified assets.

AGE AND INVALID PENSIONS—WESTERN AUSTRALIA

Year ended 30th June :—	Number of pensioners at 30th June			Number per 10,000 of population		Average fortnightly pension at 30th June		Pensions paid during year (a)	
	Age	Invalid	Total Age and Invalid	Age	Invalid	Age	Invalid	Total Amount	Per head of population
						£ s. d.	£ s. d.	£'000	£ s. d.
1958	33,124	5,519	38,643	473	79	8 5 11	8 9 5	8,077	11 12 11
1959	34,629	5,941	40,570	486	83	8 5 7	8 11 3	8,622	12 4 4
1960	36,575	6,152	42,727	507	85	8 19 5	9 8 8	9,916	13 16 6
1961	37,656	6,945	44,601	511	94	9 14 6	10 0 9	10,793	14 15 10
1962	39,104	7,826	46,930	518	104	10 3 9	10 10 8	12,172	16 6 5

(a) Includes amounts paid to benevolent homes for maintenance of pensioners and to pensioner inmates of these homes. Includes also allowances to wives of invalid pensioners. From 1958–59 includes supplementary assistance.

Rehabilitation Service—Since the 10th December, 1948 a rehabilitation service has been provided for invalid pensioners and others whose disabilities are remediable and who have reasonable prospects of engaging in a suitable vocation within three years. With the aim of restoring disabled persons to independence and usefulness, the service provides the necessary treatment and training together with books, tools and equipment. Rehabilitation and training allowances are paid. Commonwealth expenditure in respect of the Rehabilitation Service in Western Australia was £79,428 in 1957–58 ; £93,322 in 1958–59 ; £85,370 in 1959–60 ; £79,243 in 1960–61 and £78,676 in 1961–62.

Funeral Benefit—From the 1st July, 1943, a funeral benefit of up to £10 has been payable to persons who are required to meet the funeral expenses of an age or invalid pensioner or of a claimant who, but for death, would have been granted an age or invalid pension. Commonwealth payments of funeral benefit in Western Australia amounted to £23,482 in 1957–58 ; £23,244 in 1958–59 ; £24,153 in 1959–60 ; £25,945 in 1960–61 and £25,989 in 1961–62.

Widows' Pensions

Widows' pensions have been paid since the 30th June, 1942 and are granted subject to a means test and residential qualifications. The term " widow " is extended to include deserted wives, divorcees and women who have been deprived of support by the insanity or imprisonment of the husband.

A widow having the care of one or more children under 16 years of age may receive £5 10s. per week together with an additional 15s. per week for each child other than the first. Widows aged 50 years and over with no dependent children may be paid £4 12s. 6d. per week. Those aged under 50 and having no children under 16 years of age are entitled to a pension if in necessitous circumstances, when a weekly pension of £4 12s. 6d. may be paid for not more than 26 weeks after the death of the husband but, where the widow is pregnant, payment may be continued until the birth of her child. A widow pensioner who pays rent and is considered to be entirely dependent on her pension may receive supplementary assistance of 10s. per week.

The rate of pension is reducible by the application of a means test in respect of income and property which, for the purposes of assessment, excludes the pensioner's home, furniture and personal effects and some other specified assets.

WIDOWS' PENSIONS—WESTERN AUSTRALIA

Year ended 30th June :—	Pensions current at 30th June		Average fortnightly rate of pension	Pensions paid during year	
	Number	Per 10,000 of population		Total Amount	Per head of population
			£ s. d.	£'000	£ s. d.
1958	3,542	51	8 2 7	708	1 0 5
1959	3,833	54	8 3 11	800	1 2 8
1960	4,039	56	9 0 9	914	1 5 6
1961	4,348	59	9 11 9	1,052	1 8 10
1962	4,570	61	10 5 4	1,186	1 11 10

Unemployment and Sickness Benefits

Payments to persons unemployed or temporarily incapacitated for work by sickness or accident were introduced on the 1st July, 1945 and are subject to residential qualifications and a means test in respect of income but not of property. Unemployment and sickness benefits are paid to men over 16 and under 65 years of age and to women over 16 and under 60 years of age.

The maximum weekly rate of benefit for an unmarried claimant over 21 years of age is £4 2s. 6d. per week. For unmarried juveniles, the rate is £1 15s. for those aged under 18 years and £2 7s. 6d. for those aged 18 and under 21 years. A married claimant with dependent spouse may receive £7 2s. 6d. per week, with an additional 15s. per week for each dependent child under 16 years of age. In the case of claimants aged over 21 years, income of £2 per week is allowed in addition to the benefit but any income in excess of £2 is deducted from the benefit. Where the claimant is less than 21 years of age, the permissible weekly income is £1 and the rate of benefit is reducible by the amount of any income in excess of £1 per week. For unemployment benefit purposes, the incomes of both husband and wife are taken into account. For sickness benefit purposes, any payment received on account of the sickness from an approved friendly society or similar body is disregarded. A married woman is not eligible to receive a sickness benefit if it is reasonably possible for her husband to maintain her. Where her husband is able to maintain her only partially a benefit may be paid at such rate as is considered reasonable in the circumstances. There is a waiting period of seven days, during which time neither unemployment nor sickness benefit is payable.

UNEMPLOYMENT AND SICKNESS BENEFITS—WESTERN AUSTRALIA

Period	Average number on benefit at end of each week	Persons on benefit at end of period		Benefits paid during year	
		Number	Per 10,000 of population	Total Amount	Per head of population
UNEMPLOYMENT BENEFITS					
Year ended 30th June—				£	s. d.
1958	2,330	3,005	43	482,735	13 11
1959	2,852	2,939	41	*654,160	18 6
1960	2,512	2,293	32	*564,492	15 9
1961	2,154	3,417	46	479,159	13 2
1962	2,932	2,667	35	726,082	19 6
Quarter ended :—					
30th September, 1961	3,520	2,963	40	(a)	(a)
31st December, 1961	2,695	3,187	43	(a)	(a)
31st March, 1962	2,935	2,544	34	(a)	(a)
30th June, 1962	2,534	2,667	35	(a)	(a)
SICKNESS BENEFITS					
Year ended 30th June :—				£	s. d.
1958	508	574	8·2	130,959	3 9
1959	594	649	9·1	159,230	4 6
1960	700	691	9·6	163,528	4 7
1961	665	677	9·2	153,348	4 2
1962	685	714	9·5	190,706	5 1
Quarter ended :—					
30th September, 1961	677	632	8·5	(a)	(a)
31st December, 1961	687	635	8·5	(a)	(a)
31st March, 1962	662	684	9·1	(a)	(a)
30th June, 1962	713	714	9·5	(a)	(a)

(a) Not applicable. * Revised.

Special Benefits—Special Benefits have been provided since the 1st July, 1945. A special benefit may be granted to a person not qualified for unemployment or sickness benefit and who receives no Commonwealth pension if, on account of age, physical or mental disability or for any other reason, he is unable to earn a sufficient livelihood for himself and his dependants. Special benefits are also paid to migrants who are in reception centres and are awaiting their first placement in employment. Payments of special benefits in Western Australia amounted to £18,696 in 1957–58 ; £23,337 in 1958–59 ; £23,897 in 1959–60 ; £22,196 in 1960–61 and £26,705 in 1961–62.

Maternity Allowances

Maternity allowance payments were introduced on the 10th October, 1912. The allowance is payable to a woman who, at the date of giving birth to a child (live or stillborn), is residing in Australia. There is no means test. Part of the allowance may be paid four weeks before the expected date of birth, and the balance immediately after the birth.

The allowance is £15 where there are no other children, £16 where the mother has one or two other children under 16 years of age, or £17 10s. where she has three or more other such children. These rates have been paid from the 1st July, 1947.

The amount payable is increased by £5 for each additional child of a multiple birth.

MATERNITY ALLOWANCES—WESTERN AUSTRALIA

Year ended 30th June :—	Number of claims paid	Amount paid		
		Total	Average amount per claim	Per head of population
		£	£ s. d.	s. d.
1958	16,829	271,032	16 2 1	7 10
1959	16,594	266,760	16 1 6	7 7
1960	17,012	274,816	16 3 1	7 8
1961	17,648	283,966	16 1 10	7 9
1962	17,366	279,444	16 1 10	7 6

Child Endowment

Child endowment was introduced on the 1st July, 1941. A person who is resident in Australia and has the custody, care and control of one or more children under the age of 16 years, or an approved institution of which children are inmates, is qualified to receive endowment in respect of each child. The payment is not subject to a means test.

At the inception of the scheme, the first child of a family was not endowed. Endowment for second and subsequent children and for each child in an approved institution was 5s. per week on introduction, 7s. 6d. per week from the 1st July, 1945 and 10s. per week from the 9th November, 1948. Since the 20th June, 1950 child endowment has been extended to include the first or only child of a family at the rate of 5s. per week.

CHILD ENDOWMENT—WESTERN AUSTRALIA

Year ended 30th June :	Endowed families at 30th June—			Number per 10,000 of population		Amount paid during year	
	Claims in force	Endowed children (*a*)		Claims	Endowed children (*a*)	Total (*b*)	Per head of population (*b*)
		Total	Average number per claim				
						£'000	£ s. d.
1958	104,472	234,265	2·24	1,493	3,349	4,572	6 11 10
1959	106,752	241,552	2·26	1,499	3,392	5,198	7 7 3
1960	107,918	246,788	2·29	1,495	3,418	4,860	6 15 6
1961	109,499	253,258	2·31	1,486	3,438	5,701	7 16 3
1962	112,006	262,646	2·34	1,485	3,481	5,102	6 16 10

(*a*) Excludes endowed children in approved institutions. There were 3,421 endowed child inmates in 69 institutions at the 30th June, 1962 and 3,779 endowed children in 68 institutions at the 30th June, 1961. (*b*) A number of endowments are paid every twelve weeks. During two years in every three, there are four such payments each year, and five in the third year. This accounts very largely for the fluctuations apparent in the amounts shown.

Reciprocal Arrangements with Other Countries

Reciprocal arrangements in respect of payment of age and invalid pensions, widows' pensions, unemployment and sickness benefits and child endowment have been in force between the Governments of Australia and New Zealand since the 1st July, 1949 and between Australia and the United Kingdom since the 7th January, 1954.

WAR AND SERVICE PENSIONS

War Pensions

The Repatriation Act 1920–1962 provides for the payment of pensions to ex-servicemen and their dependants in respect of death or disabilities accepted as being due to war service.

For members of the Forces who served outside Australia, or in actual combat against the enemy within Australia, pensions are payable in respect of incapacity or death which may result from any occurrence during the whole period of service. If a member served only in Australia, incapacity or death to be pensionable must have been attributable to service. In all cases, providing a member had at least six months' camp service, a condition which existed before enlistment is pensionable if it is considered that such condition was aggravated by service. The rate of pension varies according to the pensioner's previous Service rank.

Pensions for Incapacity—Incapacitated members who are able to engage in employment may, according to the degree of incapacity, receive a pension of up to £5 15s. per week (or higher according to rank) with an additional weekly amount of £1 15s. 6d. for a wife and 13s. 9d. for each child under 16 years of age.

Totally and permanently incapacitated members and the totally blinded receive a pension of £13 5s. per week. An attendant's allowance is also paid where an attendant is necessary. Allowances for wife and children are the same as for other incapacitated members.

Where a member is temporarily incapacitated by his war disability, for a period of not less than three months, to a degree which prevents him from earning more than a negligible percentage of a living wage, an additional payment may be made to bring his total pension up to £13 5s. per week. This payment continues throughout the period of his incapacity.

Pensions for Death—Where the death of a member is accepted as being due to war service, the widow is pensionable at a rate based on the member's Service rank. The minimum rate is £5 15s. per week, with a domestic allowance of £3 2s. 6d. per week where there are dependent children or the widow is aged 50 years or over or is permanently unemployable.

The weekly rate of pension for the eldest child under 16 years of age is £1 19s. and for each younger child, £1 7s. 6d. Where both parents are dead, the rate becomes £3 11s. 6d. in respect of each child.

Widowed mothers may receive a war pension ranging from £2 5s. to £4 3s. per week, according to the Service rank of a deceased son who was unmarried, if widowhood occurred either prior to or within three years after his death. The pension may be supplemented by payment of an additional amount of up to £5 5s. per week, according to the extent of other income of the pensioner. The value of property owned does not affect the pension.

WAR PENSIONS—WESTERN AUSTRALIA

Year ended 30th June :—	Number of War Pensions current at 30th June				Average fortnightly pension at 30th June			Expenditure during year	
	Incapacitated Ex-servicemen	Dependants of incapacitated Ex-servicemen	Dependants of deceased Ex-servicemen	Total	Incapacitated Ex-servicemen	Dependants of deceased and incapacitated Ex-servicemen	All War Pensioners	Total	Per head of population
					£ s. d.	£ s. d.	£ s. d.	£'000	£ s. d.
1958	18,076	33,406	3,769	55,251	4 19 6	1 11 9	2 13 11	4,008	5 15 7
1959	18,201	34,046	3,761	56,008	5 2 11	1 12 0	2 15 0	3,947	5 11 10
1960	18,353	34,476	3,815	56,644	5 12 0	1 13 5	2 18 11	4,236	5 18 1
1961	18,509	34,679	3,935	57,123	5 14 3	1 14 7	3 0 6	4,655	6 7 7
1962	18,814	34,977	4,113	57,904	5 19 11	1 16 3	3 3 5	4,665	6 5 1

Service Pensions

The payment of service pensions is provided for in the Repatriation Act 1920-1962 and has operated since the 1st January, 1936. A means test is applied in respect of income and property.

A service pension may be granted to a former member of the Forces, qualified under the Act, who is suffering incapacity from pulmonary tuberculosis, or who has served in a theatre of war (or, in the case of an ex-servicewoman, served abroad) and has attained the age of 60 years (or, in the case of an ex-servicewoman, 55 years) or is permanently unemployable. An ex-member of the Forces cannot receive a service pension in respect of more than one of the above categories at the same time and cannot receive an age or invalid pension while being paid a service pension granted on the ground of age or of being permanently unemployable.

Where a service pension is granted to an ex-serviceman on the ground that he is permanently unemployable or suffering from pulmonary tuberculosis, a service pension may also be paid to his wife and for eligible children but a service pension cannot be paid to dependants when the ex-serviceman is receiving a service pension on the ground of age.

The maximum rate for a service pensioner is £5 5s. per week and for his wife, £2 7s. 6d. per week. For the first child under 16 years of age an amount of 15s. per week is payable and for each additional child, up to and including the fourth child of the family, an amount of 2s. 6d. per week. If an ex-serviceman has the custody, care and control of children under the age of 16 years and is in receipt of a service pension on the ground that he is permanently unemployable, his service pension may be increased by 10s. per week in respect of each such child other than the first.

An ex-serviceman may receive supplementary assistance to the extent of 10s. per week if he is receiving the maximum rate of service pension, is paying rent or board and is deemed to be entirely dependent on his pension.

Under the provisions of an amendment in 1960 to the Repatriation Act, service pensioners are entitled to free medical benefits, including hospital care and dental treatment, for disabilities not due to war service.

SERVICE PENSIONS—WESTERN AUSTRALIA

Year ended 30th June :—	Number of Service Pensions at 30th June paid to—						Average fortnightly pension at 30th June	Expenditure during year	
	Ex-servicemen who are—			Dependants of Ex-servicemen who are—		Total		Total	Per head of population
	Aged	Permanently unemployable	Suffering from pulmonary tuberculosis	Permanently unemployable	Suffering from pulmonary tuberculosis				
							£ s. d.	£'000	£ s. d.
1958	1,903	1,252	159	1,159	199	4,672	5 19 8	698	1 0 1
1959	2,068	1,332	183	1,179	247	5,009	5 18 9	776	1 2 0
1960	2,257	1,427	176	1,257	227	5,344	6 7 9	876	1 4 5
1961	2,888	1,511	189	1,310	203	6,101	7 2 0	1,051	1 8 10
1962	3,568	1,685	202	1,449	211	7,115	7 13 8	1,343	1 16 0

NATIONAL HEALTH SERVICES

The National Health Act 1953-1962 provides for expenditure from the National Welfare Fund in respect of a free general practitioner service to eligible pensioners and their dependants, and hospital, medical and pharmaceutical benefits to the community generally. Other services financed from the Fund are the nutrition of children by the free supply of milk, the payment of allowances to sufferers from tuberculosis, reimbursement to State Governments of maintenance expenditure in relation to the diagnosis, treatment and control of tuberculosis, and a number of miscellaneous health services.

Hospital Benefits

The payment of hospital benefits to the States is authorized under Part V of the National Health Act. An amendment to the Act passed in 1962 and effective from the 1st January, 1963 altered the basis and method of payment of Commonwealth benefit.

Prior to the amendment, Commonwealth hospital benefits were of two types, " ordinary " hospital benefit and " additional " hospital benefit.

Commonwealth ordinary hospital benefit was provided for patients in public and approved private hospitals by way of deduction from the patient's hospital account at the rate of 8s. a day. For pensioners enrolled in the Pensioner Medical Service and their dependants while they were patients in public hospitals, 12s. a day was provided. Commonwealth additional benefit was paid through approved hospital benefit organizations to their financial members at rates varying with the amount of fund benefit for which the member was contributing.

Payment of £1 per day is now made for patients in approved hospitals who are conbributors to a registered hospital benefit fund, the benefit being paid through the fund. Payment of 8s. per day is made direct to the hospital for patients who are not contributors to a benefit organization.

An amount of £1 16s. per day is paid for pensioners or their dependants who are patients in the public ward of a public hospital, provided that no charge is made to the pensioner in respect of the treatment.

Commonwealth benefit of £1 per day is paid for all qualified patients in approved nursing homes, whether the patient is insured or not.

A " special account " system was introduced on the 1st January, 1959, to provide an assured rate of hospital fund benefits to contributors who would otherwise have been excluded from fund benefits on account of organizations' rules covering pre-existing ailments, chronic illnesses and maximum fund benefit. The hospital fund benefit generally payable in such cases is 16s. a day and is paid either from special accounts guaranteed by the Commonwealth or from the ordinary accounts of the organizations. One condition of payment is that the treatment was given in a hospital recognized for the purpose of paying this benefit, although fund benefit is paid in certain circumstances in respect of treatment in hospitals which are not recognized. If the payments from special accounts exceed the contributions credited to the account, the amount of the deficit is reimbursed by the Commonwealth.

Australian residents and their dependants who receive hospital treatment while temporarily living overseas are eligible for hospital benefits.

The following table shows the amounts of benefit paid in Western Australia during each financial year from 1957–58 to 1961–62, and the number and membership of registered benefit organizations at the 30th June in each year. It should be noted that the total number of persons covered by hospital benefit schemes is considerably higher than the number of members shown, as many members contribute on account of dependants as well as for personal benefits.

HOSPITAL BENEFITS—WESTERN AUSTRALIA

Year ended 30th June :	Amount of Benefit Paid					Registered Organizations	
	Commonwealth Benefit				Fund Benefit	Number of Organizations (d)	Number of Members (d)
	Ordinary (a)	Additional (b)	Special Account Deficits (c)	Total			
	£	£	£	£	£		
1958	644,149	285,032		929,181	618,576	13	201,768
1959	720,164	565,493		1,285,657	665,533	12	230,559
1960	740,266	793,818	141,604	1,675,688	952,343	11	244,111
1961	757,225	906,798	244,724	1,908,747	1,249,950	10	257,992
1962	780,274	976,631	241,221	1,998,126	1,533,353	11	269,123

(a) Paid to hospitals in respect of occupied beds. (b) Paid through benefit organizations. (c) Reimbursements paid to benefit organizations. (d) At 30th June.

Medical Benefits

A Medical Benefits Scheme commenced to operate from the 1st July, 1953, being authorized under the National Health (Medical Benefits) Regulations. These regulations were superseded by the National Health Act. The basic principle of the scheme is the encouragement of voluntary insurance by individuals against the costs of medical attention. The scheme provides for the payment of benefits by the Commonwealth, through medical insurance organizations registered for the purpose. The Commonwealth benefits supplement the benefits paid by the registered organizations in respect of a proportion of the medical expenses, such as fees for medical and surgical treatment, incurred by members of those organizations and their dependants.

The Act was amended in 1958 to enable registered organizations to extend their payment of medical benefits by means of the special account system referred to in the preceding section. Medical fund benefits previously disallowed in cases of pre-existing disabilities and protracted illnesses have been paid from the 1st January, 1959 under the provisions of this amendment.

The following table shows the number and cost of medical services rendered in Western Australia to members of medical benefit organizations and their dependants during each financial year from 1957–58 to 1961–62. The number of organizations and their membership at the 30th June in each year are also shown. It should be noted that the total number of persons covered by medical benefit schemes is considerably higher than the number of contributors, as many members subscribe for benefits on account of dependants as well as for themselves.

MEDICAL BENEFITS—WESTERN AUSTRALIA

Year ended 30th June:	Medical Services						Registered Organizations	
	Number	Cost					Number of Organizations (b)	Number of Members (b)
		Total	Amount paid by :—					
			Commonwealth		Fund Benefit	Insured Member		
			Ordinary Benefit	Special Account Deficits (a)				
		£	£	£	£	£		
1958	1,432,459	2,082,889	656,813		854,629	571,447	9	184,934
1959	1,519,362	2,221,783	699,802		906,888	615,093	9	199,429
1960	1,784,036	2,610,298	842,856	3,384	1,061,817	702,241	9	207,677
1961	1,702,750	2,789,465	851,831	33,003	1,100,019	804,612	9	216,891
1962	1,825,965	3,036,594	921,371	20,336	1,207,242	887,645	9	225,328

(a) Reimbursements paid to benefit organizations. (b) At 30th June.

A Pensioner Medical Service, which commenced on the 21st February, 1951, was introduced under the authority of the National Health (Medical Services to Pensioners) Regulations made under the provisions of the National Health Service Act 1948–1949. The service has been continued under the provisions of the National Health Act 1953–1962.

Under this scheme, eligible pensioners and their dependants, as defined in the following section describing pharmaceutical benefits, are provided with a free general practitioner service. Specialist services are not provided. A small fee may be charged by practitioners who attend qualified patients outside normal surgery or visiting hours. Practitioners in the scheme are remunerated on a fee-for-service basis by the Commonwealth.

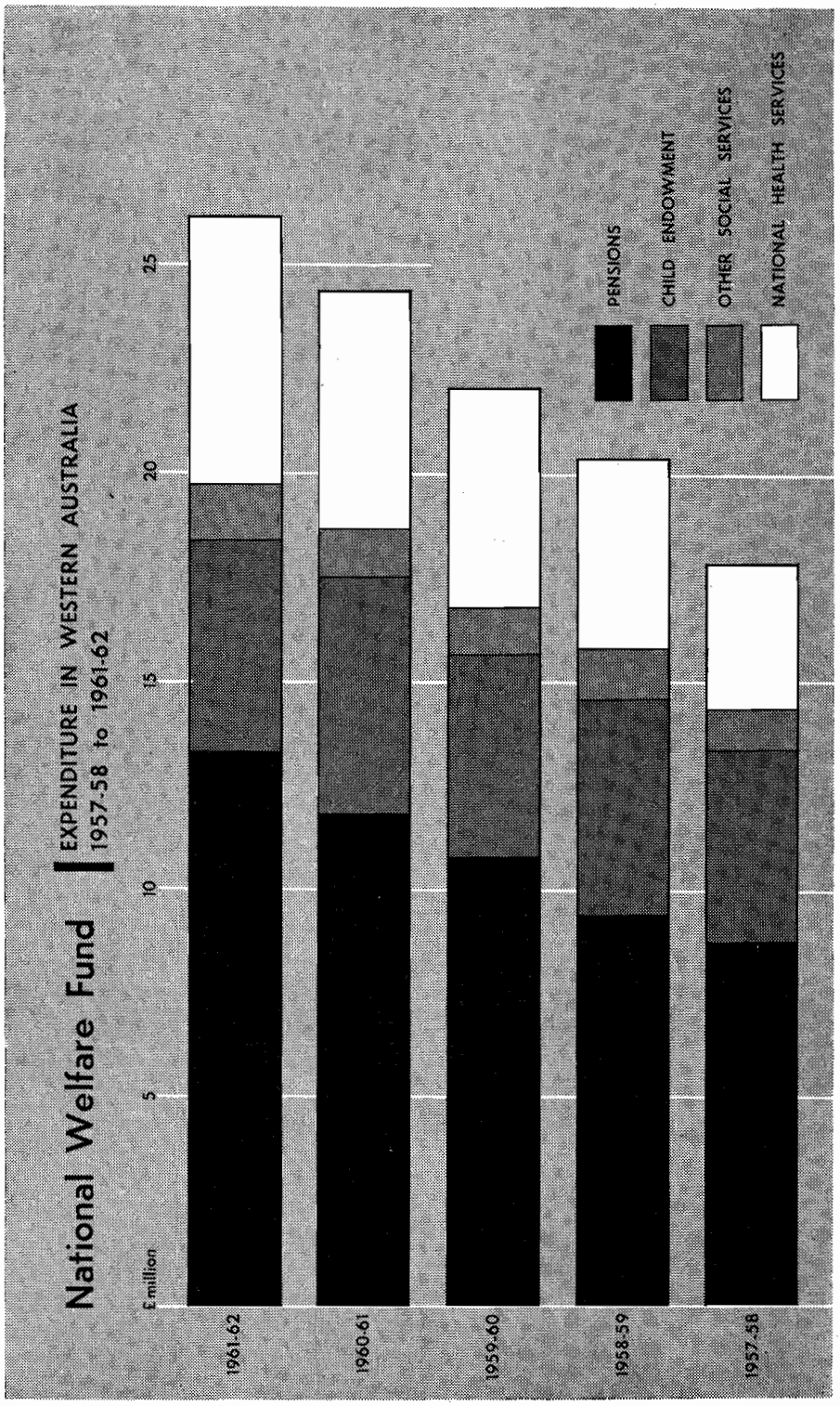
Pharmaceutical Benefits

The Pharmaceutical Benefits Scheme was inaugurated on the 4th September, 1950 when certain life-saving and disease-preventing drugs became available to the general community free of charge if duly prescribed by a medical practitioner registered in Australia. From the 1st March, 1960 a charge of 5s. has been levied, except in the case of pensioners or their dependants, for each prescription dispensed and for a repeat supply of the prescription. This amount represents the first 5s. of the total cost, the remainder being met by the Commonwealth. With the introduction of this charge, the list of drugs available as pharmaceutical benefits was greatly expanded and now includes the majority of those covered by the British Pharmacopoeia and a wide range of other drugs. Additions are recommended from time to time by the Pharmaceutical Benefits Advisory Committee, a committee of medical experts which advises the Government on the value of drugs most suitable for the treatment of various diseases.

A service providing pharmaceutical benefits free of charge to pensioners has been in operation since the 2nd July, 1951. The full range of medicines supplied under the general scheme, and certain additional drugs, are available for this service. Persons qualifying for benefits are those who satisfy a means test and are receiving an age, invalid or widow's pension, a service pension or a tuberculosis allowance. The benefits of the scheme apply also to the dependants of persons so qualified.

Free Milk for School Children

The States Grants (Milk for School Children) Act 1950 provides for the distribution of free milk to school children throughout the Commonwealth, with the object of improving their diet. All children


National Welfare Fund
EXPENDITURE IN WESTERN AUSTRALIA
1957-58 to 1961-62
£ million
5
10
15
20
25
1961-62
1960-61
1959-60
1958-59
1957-58
PENSIONS
CHILD ENDOWMENT
OTHER SOCIAL SERVICES
NATIONAL HEALTH SERVICES

under the age of 13 years attending school are eligible to receive this issue. The cost of the milk plus half the capital or incidental costs, including expenses incurred in administering the scheme, is reimbursed by the Commonwealth to the State, which arranges for the distribution.

Tuberculosis Campaign

The Tuberculosis Act 1948 provides for a joint Commonwealth and State campaign against tuberculosis. The Commonwealth has an arrangement with the States, whereby each State is required to conduct a campaign against tuberculosis and to provide adequate facilities for that purpose. In consideration of this, the Commonwealth undertakes to reimburse the State for all approved capital expenditure in relation to tuberculosis and for net maintenance expenditure to the extent that it is in excess of net maintenance expenditure for the base year 1947–48. Thus, the States are required to carry out the actual physical or field work of the national campaign with the Commonwealth acting in an advisory, co-ordinating and financial capacity.

A system of tuberculosis allowances to individuals is provided. Payments under the scheme commenced on the 13th July, 1950. The rate of allowance to a married sufferer with dependent wife is £12 2s. 6d. per week. An amount of 15s. per week is payable for the first dependent child under 16 years of age and 10s. per week for each additional child. A sufferer without dependants is eligible to receive £7 7s. 6d. per week, reducible to £5 5s. per week if maintained free of charge in an institution. There is a means test, which applies only to income and not to property. The allowance is reduced by the amount by which income from other sources exceeds £7 per week in the case of a married sufferer and £3 10s. per week in the case of a person without a dependent wife.

The amounts of expenditure shown in the next table exclude Commonwealth payments to the State Government in the form of reimbursement of capital expenditure in connexion with the campaign. These payments were £682,997 in 1957–58 ; £257,164 in 1958–59 ; £39,198 in 1959–60 ; £21,513 in 1960–61 and £11,890 in 1961–62.

Miscellaneous Health Services

Commonwealth expenditure under the heading of Miscellaneous Health Services includes the cost of district laboratory services, the free supply of prophylactic materials and biological products such as insulin and poliomyelitis and diphtheria prophylactics, the supply and maintenance of hearing aids for children, subsidies to voluntary organizations conducting home-nursing services, and certain costs associated with the blood transfusion services of the Australian Red Cross Society.

Summary of Expenditure

Expenditure on health services in Western Australia from the National Welfare Fund in each financial year from 1957–58 to 1961–62 is summarized in the following table.

NATIONAL WELFARE FUND
EXPENDITURE ON HEALTH SERVICES—WESTERN AUSTRALIA

Service	Financial Year				
	1957–58	1958–59	1959–60	1960–61	1961–62
	£	£	£	£	£
Hospital Benefits—					
Ordinary	644,149	720,164	740,266	757,225	780,274
Additional	285,032	565,493	793,818	906,798	976,631
Special Account Deficits			141,604	244,724	241,221
Medical Benefits—					
Ordinary	656,813	699,802	842,856	851,831	921,371
Special Account Deficits			3,384	33,003	20,336
Medical Benefits for Pensioners	216,113	258,836	274,503	284,890	286,006
Pharmaceutical Benefits	863,884	1,221,487	1,337,231	1,316,042	1,794,685
Pharmaceutical Benefits for Pensioners	139,282	175,557	251,829	499,163	609,797
Nutrition of Children	152,600	182,249	228,797	224,052	263,067
Tuberculosis Campaign—					
Allowances	76,109	78,084	70,230	57,427	39,989
Maintenance	444,410	557,969	511,505	498,306	396,638
Miscellaneous Services	12,975	14,334	17,237	19,330	17,298
TOTAL	3,491,367	4,473,975	5,213,260	5,692,791	6,347,313

Mental Institutions

Under the States Grants (Mental Institutions) Act 1955 the Commonwealth is authorized to make payments to the States for, or in connexion with, the buildings or equipment of mental institutions. Commonwealth expenditure on mental hospitals in Western Australia was £29,236 in 1957–58 ; £17,210 in 1958–59 ; £36,799 in 1959–60 ; £15,276 in 1960–61 and £77,023 in 1961–62. Under the Act the Commonwealth liability in Western Australia is limited to a total of £720,000.

STATE RELIEF PAYMENTS

The State Government, through the Child Welfare Department, makes relief payments which in most cases supplement the social benefits provided by the Commonwealth Government. The payments are made primarily to ensure that dependent children do not suffer hardship from the indigence of parents or guardians. Those assisted include deserted wives, unmarried mothers, widows having the care of children, and women with husbands unable to support them owing to sickness, unemployment, age or imprisonment.

Other aid provided by the State for persons in need includes rail passes for country people requiring medical treatment in the metropolitan area and the provision of school requisites for children of women receiving financial assistance. In certain circumstances, the burial of indigent persons is arranged at State expense.

Deserted wives and unmarried mothers applying to the Department for assistance are given advice concerning the legal redress available to them and it is usual for application to be made to a Married Persons' Relief Court or a Children's Court for an order requiring the husband or the father to provide maintenance. Court orders are enforceable throughout Australia and in certain oversea countries.

State monetary assistance to deserted wives, women with husbands in prison and widows, not in receipt of a Commonwealth widow's pension, is at the rate of £4 2s. 6d. per week, plus £1 10s. per week for the first dependent child and 15s. per week for each other dependent child. To a widow receiving a Commonwealth pension the State pays 12s. 6d. per week for the first dependent child and 15s. per week for each additional child. Where an age or invalid pensioner has dependent children, the State allows £1 per week for the first child, 5s. per week for the second child and 15s. per week for each additional child. Where the wife of an age pensioner is not eligible to receive a wife's allowance from the Commonwealth and there are dependent children, she may be paid an amount of £3 2s. 6d. per week by the State. Where Commonwealth unemployment or sickness benefits are payable to married men, the State allows £1 10s. per week where there are one or two dependent children, £1 5s. where there are three or four children and £1 where there are five or more children. In addition, Commonwealth child endowment is payable in respect of all dependent children. Details of Commonwealth Social Services benefits are given earlier in this Chapter in the section *Social Services Benefits*. The amount of State assistance granted is subject to a means test and in assessing income the earnings of the children of a family are taken into account.

WOMEN RECEIVING FINANCIAL ASSISTANCE FROM CHILD WELFARE DEPARTMENT

Description	Number at 30th June—				
	1958	1959	1960	1961	1962
Widows	153	181	180	175	183
Unmarried Mothers	31	22	15	30	40
Deserted Wives	403	405	333	323	322
Other Married Women—					
Husband Pensioner	110	125	144	171	142
Husband Sick or Unemployed	989	929	702	1,111	472
Husband Imprisoned	62	59	58	82	62
Divorced Women	11	6	9	10	8
Foster-mothers	106	101	98	94	76
Special Cases	16	18	11	10	9
Total Women	1,881	1,846	1.550	2,006	1,314

CHILD WELFARE

Under the provisions of the Child Welfare Act, 1947–1962 the State Government, through the Child Welfare Department, is responsible for the care of State wards and children placed under supervision or released on probation by Children's Courts. For the purposes of the Act, a child is defined as " any

boy or girl under the age of eighteen years." Institutions caring for children, as well as children brought to Western Australia under child migration schemes, are subject to supervision by the Department, as also are foster-mothers who have in their care children under six years of age and are required under the Act to be licensed for this purpose. Among other functions of the Department are the arranging of legal adoptions and the licensing of children employed in street trading and in public entertainment. A provision of the Child Welfare Act Amendment Act, 1959 vests in the Department the right to decide which institution or what form of treatment is appropriate to the needs of a child committed by a Children's Court to the care of the Department for treatment, discipline and training.

Children's Courts are established at Perth and at other centres throughout the State and have jurisdiction in all cases where children under 18 years of age are involved whether as offenders or as being neglected or destitute. The Courts also have jurisdiction to deal with adults committing certain specified offences against children. The public is excluded from Court hearings and names of juvenile offenders are withheld from publication. Adults charged with certain indictable offences against children may forgo the right to trial by jury and agree to be dealt with summarily by Children's Courts. This power to exercise summary jurisdiction is designed to eliminate as far as possible the necessity for children to appear in open courts as witnesses in cases dealing with sex offences. A Children's Court may commit such offenders for sentence by the Supreme Court.

Children guilty of minor offences may be cautioned, fined, bound over, placed on probation, or dismissed without a conviction being recorded. A Court may declare a child to be neglected or destitute and may order the child to be committed to the care of the Child Welfare Department, sent to an approved institution, or released on probation. Children found guilty of offences punishable by imprisonment may be committed to the care of the Department, released on security given by parents, or released on probation under the supervision of the Department. Those guilty of less serious or first offences are generally placed in the care of their parents or suitable guardians under appropriate supervision by officers of the Child Welfare Department. Supervision and probation cases, other than State wards, numbered 680 at the 30th June, 1962.

Wards of the Child Welfare Department—A child committed to the care of the Child Welfare Department or to an institution becomes a ward of the Department. A ward may be placed in an institution, boarded out with a relative or other approved person, paroled or placed in suitable employment. The Director of Child Welfare has authority to place wards of working age in employment or apprenticeship. Where a ward is required to live at the place of employment, a service agreement covering wages and working conditions is made between the employer and the Department, which continues to watch the interests of the ward. At the 30th June, 1962, there were 2,391 wards, of whom 445 were in institutions (excluding 28 in mental hospitals and 2 in prison), 1,576 were boarded out, 111 were in service or apprenticed and 263 were on parole or probation.

Private Children—In addition to wards, there are some private children under the supervision of the Department. These comprise children under six years of age who may be either in institutions or in the care of licensed foster-mothers. At the 30th June, 1962 there were 87 such children in institutions and 46 in the care of foster-mothers.

Institutions—The State Government subsidizes homes for children in Western Australia. Most of these institutions are conducted by religious organizations and several of them provide for children brought from Great Britain, Ireland and Malta under child migration schemes. All institutions having the care of wards, migrant children or private children under six years of age are subject to the supervision of the Department.

" Hillston " Anglican Farm School at Stoneville and " Riverbank " at Caversham are reformatories for delinquent boys. " Riverbank " is a maximum security institution for the treatment of the more difficult offenders and is controlled by the Child Welfare Department. The Home of the Good Shepherd at Leederville and the Baptist community at Wattle Grove care for delinquent and maladjusted girls.

The Child Welfare Department maintains a Reception Home at Mount Lawley which serves as a temporary shelter for deprived or neglected children awaiting placement, a haven for children whose parents are temporarily unable to care for them, and a remand home for children awaiting appearance before Children's Courts.

The following table shows details of children in institutions under the supervision of the Child Welfare Department at the 30th June, 1962.

CHILDREN IN INSTITUTIONS AT 30th JUNE, 1962 (a)

Institution	State Wards		Migrant Children (b)		Private Children		Total		
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Children
CHILD WELFARE DEPARTMENT—									
Reception Home, Mt. Lawley	22	14			1	2	23	16	39
Riverbank, Caversham	33						33		33
Total	55	14			1	2	56	16	72
ANGLICAN—									
Hillston Farm School, Stoneville	62						62		62
Parkerville Children's Home, Parkerville	52	32			25	36	77	68	145
Swanleigh, Middle Swan	5	2	9	10	41	29	55	41	96
Total	119	34	9	10	66	65	194	109	303
METHODIST—									
Mofflyn, Victoria Park		1			21	20	21	21	42
PRESBYTERIAN—									
Sister Kate's Children's Home, Queens Park	9	7			27	23	36	30	66
ROMAN CATHOLIC—									
Castledare Boys' Home, Cannington	26		3		79		108		108
Clontarf Boys' Town, Victoria Park	33		26		84		143		143
Home of the Good Shepherd, Leederville		24				56		80	80
Nazareth House, Geraldton		4		6	4	44	4	54	58
Saint Joseph's Boys' Town, Bindoon	5		15		8		28		28
Saint Joseph's Orphanage, Wembley		16		6		67		89	89
Saint Mary's Agricultural School, Tardun	4		40		8		52		52
Saint Vincent's Foundling Home, Wembley	3	2			38	35	41	37	78
Total	71	46	84	12	221	202	376	260	636
SALVATION ARMY—									
Boys' Home, Hollywood	50				44		94		94
Girls' Home, Cottesloe		17				43		60	60
Total	50	17			44	43	94	60	154
UNDENOMINATIONAL—									
Kingsley Fairbridge Farm School, Pinjarra			55	22	28	21	83	43	126
Ngal-a, South Perth	6	4			14	20	20	24	44
Shiloh College, Broomehill	12						12		12
Total	18	4	55	22	42	41	115	67	182
GRAND TOTAL	322	123	148	44	422	396	892	563	1,455

(a) Excludes 28 State wards in mental hospitals and 2 State wards in prison. Excludes also children at native missions.
(b) Children brought to Western Australia under child migration schemes.

Maintenance of Children—Payments by the Child Welfare Department to foster-parents having the care of State wards are at the rate of £2 5s. per week for each child. Institutions are paid subsidies at the rate of £1 16s. per week for each ward in their care. The British Government pays £1 5s. per week for each British migrant child in institutions or boarded out and the State Government pays an additional amount of 6s. per week. A further grant of 10s. per week for each child maintained is paid to the institutions by the State Lotteries Commission. Where an institution refuses assistance from the Commission on religious or moral grounds the State Government may grant an equivalent allowance to the institution for each ward maintained. All institutions and foster-parents having the care of children receive Commonwealth child endowment payments.

Parents or near relatives are required to contribute towards the maintenance of wards in institutions or boarded out.

Employment of Children—The Child Welfare Act, 1947–1962 provides that children may not engage in street trading except under licence granted by the Department. The issue of licences is restricted to those aged 12 years and over and it is an offence to employ an unlicensed child. Most of the licences issued are for the sale of newspapers.

The Act provides further that children under the age of 16 years may not take part in any form of public entertainment for profit or reward unless under licence, except in the case of an occasional entertainment for the benefit of a school or charitable or patriotic object. Most of these licences are issued for concerts arranged by dancing teachers and other tutors.

Adoption of Children—Any person who takes charge of a child with the object of adoption must notify the Director of Child Welfare. Legal adoptions may be arranged by the Department or privately by solicitors. In either case, the Director is required to investigate the suitability of applicants and an order for adoption must be obtained from a Judge of the Supreme Court. During the year ended 30th June, 1962, adoption orders numbering 360 were granted.

Expenditure—The following table gives details of the annual expenditure of the Child Welfare Department during the five-year period ended 30th June, 1962.

EXPENDITURE OF CHILD WELFARE DEPARTMENT

Nature of Expenditure	1957–58	1958–59	1959–60	1960–61	1961–62
	£	£	£	£	£
Administration	114,633	127,329	143,368	147,534	163,206
Departmental Institutions	72,789	76,122	92,151	159,771	172,700
Maintenance of Wards	96,508	103,901	112,332	123,095	132,486
Maintenance of Migrant Children	47,641	39,069	32,432	27,182	22,497
Outdoor Relief (*a*)	151,880	164,265	148,059	153,368	151,872
Unemployment Relief	149,959	205,550	122,933	121,991	119,636
Parole Classes		2,093	2,266	1,764	1,905
Total Expenditure	633,410	718,329	653,541	734,705	764,302
Total Revenue	46,162	52,351	56,151	63,689	69,399
Net Expenditure	587,248	665,978	597,390	671,016	694,903

(*a*) Assistance to women with dependent children and to the infirm.

CHAPTER V—*continued*

PART 6—LAW COURTS, POLICE AND PRISONS

LAW COURTS

The principal courts operating in Western Australia are the High Court of Australia, the Supreme Court of Western Australia, the Session Courts, the Magistrates' and Coroners' Courts, the Married Persons' Relief Court, the Western Australian Court of Arbitration[1] and the Licensing Court.

High Court of Australia

The High Court of Australia is the Federal Supreme Court and its powers are defined in the Commonwealth Constitution and in the Judiciary Act 1903–1960. The High Court consists of a Chief Justice and six other Justices. Sittings are held in the capital city of each State as occasion may require. The High Court exercises both original and appellate jurisdiction, acting as a court of appeal for Australia. An appeal may lie from a judgment of the High Court of Australia to the Judicial Committee of the Privy Council in London.

Supreme Court of Western Australia

The Supreme Court of Western Australia, as constituted under the Supreme Court Act, 1935–1960, consists of a Chief Justice and such other Judges, not exceeding six in number, as may from time to time be appointed. The jurisdiction of the Court in both civil and criminal matters is exercised by a single Judge, sitting alone or with a jury, unless it is provided that an action must be brought before a Full Court. Criminal cases are heard before a jury. Criminal sittings of the Supreme Court are held at Perth each month from February to December and civil sittings each month from March to December.

The Eastern Goldfields Circuit Court sits at Kalgoorlie four times a year, a Judge of the Supreme Court presiding.

Any two or more Judges together comprise a Full Court except that when sitting as a court of criminal appeal there must be an uneven number of Judges. The Full Court sits at least five times in every year with additional sittings when necessary. Appeals are heard against judgments of the Supreme Court and of the Circuit and Session Courts as well as against decisions of the magistrates in lower courts.

Appeal from a judgment of the Supreme Court of Western Australia lies to the High Court of Australia, subject to the provisions of the Judiciary Act 1903–1960 (Commonwealth), and may also be made direct to the Privy Council. Under the Bankruptcy Act 1924–1960 (Commonwealth) the Supreme Court is invested with federal jurisdiction in bankruptcy.

Session Courts of the State

The Session Courts are held four times a year at the principal court houses of each of the fourteen session divisions. The Stipendiary Magistrate stationed at the centre at which a Court is held usually presides. Only criminal cases are dealt with and a jury is therefore required at all sittings. A case may be reserved for hearing before a Judge of the Supreme Court. Magistrates presiding at Session Courts may sit in association with one or more Justices of the Peace.

Magistrates' and Coroners' Courts

In addition to their usual functions, magistrates act as coroners and mining wardens where required. Two or more Justices of the Peace sitting together in petty sessions may deal with cases which could be decided by a magistrate sitting alone.

Police Courts are held at centres of population throughout the State. Minor offences are dealt with summarily, but a person charged with an indictable offence may be committed to a higher court for trial or sentence if there is sufficient evidence to justify this course.

Children's Courts—Special Children's Courts are established in Perth, and at other centres as required, to deal with offenders under the age of eighteen years and to hear cases of offences against children. A Children's Court has power to deal summarily with most offences concerning children. The public is excluded from Children's Court hearings and names of juvenile offenders are withheld from publication. Further reference to Children's Courts appears in the section *Child Welfare* in Part 5 of this Chapter.

Coroners' Courts may be held to inquire into the circumstances of sudden or unnatural deaths or the cause and origin of fires. A Coroner may charge a person with a major offence and commit him for trial at a higher court.

[1] See *Appendix*.

Married Persons' Relief Court—The Married Persons' Relief Court is established under the provisions of the Married Persons (Summary Relief) Act, 1960 and is empowered to make orders providing for separation, payment of maintenance, legal custody of a child and access to a child.

Local Courts are held throughout the State to determine minor civil issues, largely the recovery of small debts. Jurisdiction is limited in most cases to claims not exceeding £500.

Civil Proceedings

Civil Cases—Particulars of civil cases dealt with by the courts in the ten years ended 31st December, 1962 are shown in the following table.

CIVIL CASES (*a*)

Year	Higher Courts				Lower Courts			
	Writs		Judgments Signed and Entered		Plaints		Judgments	
	Number	£	Number	£	Number	£	Number	£
1953	1,088	482,436	378	215,987	19,643	374,484	6,479	187,777
1954	1,143	599,955	453	275,929	24,773	583,751	8,246	244,451
1955	847	526,303	361	307,785	31,079	1,051,654	9,480	448,213
1956	715	518,027	270	280,531	40,313	1,255,197	12,460	415,698
1957	718	478,960	262	337,049	39,259	1,271,653	14,058	525,064
1958	792	351,921	273	300,626	46,077	1,487,625	14,816	562,166
1959	822	530,290	219	356,805	45,794	1,412,790	14,382	527,805
1960	890	644,924	285	310,501	43,810	1,350,023	15,125	589,977
1961	1,020	799,725	321	417,340	46,657	1,656,048	21,495	863,041
1962	1,054	832,538	388	595,807	49,832	1,825,703	21,567	899,590

(*a*) Excludes proceedings in divorce (*see* next table) and in bankruptcy (*see* page 222).

Divorce—Decrees of dissolution of marriage, nullity of marriage and judicial separation may be granted by the Supreme Court or the Eastern Goldfields Circuit Court. The following table shows the number of petitions filed and decrees granted in each year from 1953 to 1962.

DIVORCE

Year	Petitions	Decrees of—		
		Dissolution of Marriage	Nullity of Marriage	Judicial Separation
1953	620	535	6	
1954	596	530	2	1
1955	575	479	6	3
1956	662	544	4	4
1957	633	541	1	3
1958	665	536	6	2
1959	681	584	2	1
1960	570	540	2	5
1961	622	466		1
1962	654	582	2	1

Western Australian Court of Arbitration [1]

The main purpose of the Court of Arbitration is to determine wages and working conditions and to maintain industrial peace in Western Australia. The Court comprises a President, a representative of employers' organizations and a representative of employees' unions. The President of the Court must be a person qualified to be appointed a Judge of the Supreme Court.

The Court of Arbitration has power to intervene in any industrial dispute occurring within the State, whether or not the parties are registered under the Industrial Arbitration Act.

[1] See *Appendix*.

Commonwealth Industrial Court

The Commonwealth Industrial Court is constituted by the Conciliation and Arbitration Act 1904–1961. It comprises a Chief Judge and three other Judges and is empowered to deal with judicial matters under the Act. Although, in general, decisions of the Court are final, an appeal may be made to the High Court of Australia, but only when the High Court grants leave to appeal.

Commonwealth Conciliation and Arbitration Commission

The Commonwealth Conciliation and Arbitration Commission, as constituted under the provisions of the Conciliation and Arbitration Act 1904–1961, consists of a President, not less than two Deputy Presidents, a Senior Commissioner and not less than five Commissioners. The Act provides also for the appointment of Conciliators. At the 31st December, 1963 there were, in addition to the President and the Senior Commissioner, five Deputy Presidents, ten Commissioners and three Conciliators. Generally, the Commission's jurisdiction is limited to the prevention or settlement, by conciliation or arbitration, of industrial disputes which extend beyond the limits of any one State, but the Commission is empowered to conciliate or arbitrate in respect of any dispute or industrial matter associated with Commonwealth Government undertakings or projects. The Principal Registry of the Commission is in Melbourne, Victoria, and there is a Deputy Industrial Registrar in each State.

Licensing Court

The Licensing Court consists of three members appointed by the Governor to administer the Licensing Act and to issue licences for the sale of alcoholic liquor.

CRIME STATISTICS

Statistics appearing in this section exclude particulars of aboriginals unless otherwise stated.

Magistrates' Courts

The following table gives particulars of convictions in Magistrates' Courts, including Children's Courts, during the ten years ended 31st December, 1962.

CONVICTIONS IN MAGISTRATES' COURTS

Year	Offences against the Person		Offences against Property		Forgery and Offences against Currency		Offences against Good Order		Other Offences (a)		Total Convictions (a)		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total
1953	323	25	3,034	250			7,319	626	27,949	1,117	38,625	2,018	40,643
1954	368	18	3,618	235	2		7,094	503	34,747	1,420	45,829	2,176	48,005
1955	363	26	3,667	312			6,821	523	50,654	2,752	61,505	3,613	65,118
1956	489	17	4,430	352	1		7,185	481	44,577	2,351	56,682	3,201	59,883
1957	377	15	4,439	374			6,571	578	41,842	2,101	53,229	3,068	56,297
1958	448	22	5,139	407			6,023	571	32,707	1,720	44,317	2,720	47,037
1959	381	13	4,671	354	4		6,675	710	32,768	2,003	44,499	3,080	47,579
1960	356	26	4,896	483	3		6,302	616	32,431	2,349	43,988	3,474	47,462
1961	393	18	4,493	351	1		6,721	461	30,826	2,509	42,434	3,339	45,773
1962	490	18	5,838	467		1	7,035	417	32,545	2,880	45,908	3,783	49,691

(a) Including traffic offences ; for separate particulars see next table. In addition, fines collected by the Crown Law Department and the Perth City Council for minor traffic offences numbered :—1956, 32,130 ; 1957, 31,405 ; 1958, 36,999 ; 1959, 44,973 ; 1960, 50,879 ; 1961, 44,392 ; 1962, 42,582.

In 1955, the Traffic Act was amended to provide for the imposition of small fines for minor traffic offences without the formality of court hearings. In 1956 legislation was enacted to empower the Perth City Council to provide parking facilities in the City area and to impose fines for parking offences. As a result of these measures, total convictions in Magistrates' Courts have declined from the record number of 65,118 reached in 1955. Disregarding traffic offences, convictions increased by 15·1 per cent. from 1953 to 1962, compared with an increase of 21·6 per cent. in the mean population.

CONVICTIONS IN MAGISTRATES' COURTS FOR CERTAIN OFFENCES

Year	Assault, Wounding, etc.		Stealing, Receiving, etc.		Drunkenness		Disorderliness		Gaming		Traffic Offences (a)	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1953	296	18	2,103	234	5,692	518	882	54	2,485	3	20,213	780
1954	319	18	2,465	222	5,426	383	895	59	2,951	6	26,506	1,054
1955	327	19	2,537	302	5,307	413	771	44	(b)1,858	9	43,229	2,430
1956	323	15	2,973	330	5,552	360	889	59	299	11	37,473	1,911
1957	259	15	2,936	337	4,968	460	924	54	394	4	35,022	1,637
1958	303	20	3,263	362	4,409	412	990	66	245	1	25,194	1,053
1959	303	12	3,025	329	5,046	541	900	97	214	2	25,219	1,183
1960	249	25	3,106	431	4,679	465	903	86	136		26,178	1,242
1961	303	17	2,983	320	4,997	336	820	46	92		24,664	1,216
1962	333	18	3,685	435	5,024	303	1,444	91	142	2	25,726	1,343

(a) *See* note to previous table. (b) The Betting Control Act, 1954, legalizing off-course betting on premises licensed for the purpose came into operation on the 1st August, 1955.

Particulars of distinct persons convicted in Magistrates' Courts are not available, but it is known that many are charged with multiple offences. This applies particularly to juveniles. Statistics of convictions of juvenile offenders during 1962, classified according to age, sex and nature of offence, are shown in the following table.

CONVICTIONS OF JUVENILES, 1962

Age (years)	Breaking, Entering and Stealing		Stealing, Receiving, etc.		Wilful Damage		Traffic Offences		Other Offences		Total Convictions		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total
7			1								1		1
8	6		5		2						13		13
9	13		19		7		2		5		46		46
10	46		47	3	10		3	2	4		110	5	115
11	28		55	6	12		4	4	7		106	10	116
12	107	2	129	9	3		13		17	2	269	13	282
13	98		183	16	10		16	1	33	2	340	19	359
14	139		188	21	13		29	2	86	5	455	28	483
15	155		197	33	16		82	2	220	6	670	41	711
16	97	4	165	26	9	2	205	21	307	11	783	64	847
17	104	1	186	40	9	1	815	24	443	13	1,557	79	1,636
Not Stated	50		125	2	9		538	10	103	4	825	16	841
Total	843	7	1,300	156	100	3	1,707	66	1,225	43	5,175	275	5,450

An upward trend is evident in the figures for offences by children under eighteen years of age, as shown in the following table. The increase is largely due to minor offences, although convictions for offences against property almost doubled during the period.

CONVICTIONS OF JUVENILES

Year	Breaking, Entering and Stealing		Stealing, Receiving, etc.		Wilful Damage		Traffic Offences		Other Offences		Total Convictions		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total
1953	338	7	732	64	99		1,073	85	401	26	2,643	182	2,825
1954	490	2	871	82	115	2	1,102	67	510	30	3,088	183	3,271
1955	502	2	946	116	73		1,359	74	556	14	3,436	206	3,642
1956	468	5	1,078	102	90	2	1,753	66	826	29	4,215	204	4,419
1957	586	28	1,125	92	97	1	2,037	56	915	29	4,760	206	4,966
1958	664	5	1,229	131	162	2	2,067	77	1,231	38	5,353	253	5,606
1959	605	1	1,065	91	125	3	2,698	151	941	32	5,434	278	5,712
1960	849	17	1,282	177	148	3	1,986	80	964	41	5,229	318	5,547
1961	673	20	1,229	109	147		1,368	40	825	34	4,242	203	4,445
1962	843	7	1,300	156	100	3	1,707	66	1,225	43	5,175	275	5,450

Higher Courts

Details of penalties inflicted by the Higher Courts during the ten years ended 31st December, 1962 are shown in the following table.

HIGHER COURTS—NATURE OF PUNISHMENT OF DISTINCT PERSONS

Year	Bound Over		Fined		Imprisoned		Sentenced to Death		Total Convictions		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total
1953	49	5	15	1	163	5	3		230	11	241
1954	39	1	5		168	3			212	4	216
1955	56		8	1	189	2	3	1	256	4	260
1956	37	5	3		184	10	2		226	15	241
1957	53	2	3		134	5	3		193	7	200
1958	55	3	7	1	185	4			247	8	255
1959	28	1	4	1	175	6	1		208	8	216
1960	45	1	2		132	2	1		180	3	183
1961	35	3	17	2	141	4	1		194	9	203
1962	41		10	1	169	7			220	8	228

Only two executions were carried out during the period. All other death sentences were commuted to life imprisonment.

Particulars of persons dealt with in Higher Courts are shown in the following table. Where a person was charged with more than one offence, only the most serious charge has been included.

HIGHER COURTS, 1962

Offence	Distinct Persons Charged			Distinct Persons Convicted		
	Males	Females	Total	Males	Females	Total
I—*Offences against the Person*—						
Murder	3		3			
Manslaughter	26	5	31	8	3	11
Rape	11		11	10		10
Incest	3		3	3		3
Unlawful carnal knowledge	1		1	1		1
Indecent assault on female	1		1	1		1
Unnatural offences	8		8	8		8
Abortion	1	2	3	1	2	3
Concealment of birth	2	2	4	1	1	2
Common assault	1		1			
Assault causing bodily harm	6	1	7	5		5
Total, Class I	63	10	73	38	6	44
II—*Offences against Property*—						
Robbery	6		6	6		6
Breaking, entering and stealing	113		113	110		110
Stealing, receiving, etc.	51	1	52	47	1	48
Unlawfully using motor vehicle	3		3	3		3
Arson	1		1	1		1
Sheep and cattle stealing	2		2	2		2
Total, Class II	176	1	177	169	1	170
III—*Forgery and Offences against Currency*	9	1	10	9	1	10
IV—*Offences against Good Order*	4		4	4		4
GRAND TOTAL	252	12	264	220	8	228

Offences by Aboriginals

Particulars are given in the next table of charges brought against aboriginal natives and convictions recorded in Magistrates' and Higher Courts during the year 1962. It will be seen that more than one-half of the charges are in connexion with the consumption of alcoholic liquor, which is denied most natives to whom the provisions of the Native Welfare Act, 1905-1960 apply. (The Licensing Act Amendment Act (No. 4), 1963 provides that this restriction shall, on proclamation of the Act, be limited to areas of the State declared for the purpose.)

OFFENCES BY ABORIGINALS, 1962

(Inclusive of concurrent offences)

Offence	Magistrates' Courts— Charges			Magistrates' Courts— Summary Convictions			Higher Courts— Convictions		
	M.	F.	Total	M.	F.	Total	M.	F.	Total
I—*Offences against the Person*—									
Manslaughter	1		1				1		1
Incest	1		1				1		1
Unlawful carnal knowledge	7		7	7		7			
Indecent dealing	1		1	1		1			
Common assault	118	34	152	106	28	134			
Assault, bodily harm	1		1				1		1
Total, Class I	129	34	163	114	28	142	3		3
II—*Offences against Property*—									
Breaking, entering and stealing	76	1	77	73	1	74	3		3
Unlawfully on premises	24	2	26	24	2	26			
Stealing, receiving, etc.	291	25	316	264	22	286	3		3
Unlawfully using vehicle, etc.	67	6	73	65	5	70			
Unlawfully killing or maiming animals	1		1	1		1			
Wilful damage	44	4	48	43	3	46			
Total, Class II	503	38	541	470	33	503	6		6
III—*Forgery and Offences against Currency*	1		1				1		1
IV—*Offences against Good Order*—									
Drunkenness	1,697	512	2,209	1,693	510	2,203			
Disorderliness	488	192	680	478	179	657			
Vagrancy	14	4	18	14	3	17			
Indecent behaviour	2		2	2		2			
Escaping, resisting and hindering police	100	14	114	96	14	110			
Other offences		2	2		2	2			
Total, Class IV	2,301	724	3,025	2,283	708	2,991			
V—*Other Offences*—									
Native Welfare Act :									
Receiving liquor	346	79	425	343	79	422			
Supplying liquor to natives	104	12	116	99	12	111			
Other offences	133	35	168	130	35	165			
Traffic offences	350	8	358	333	8	341			
Breaches of liquor laws	79	20	99	79	20	99			
Gaming	1		1	1		1			
Maintenance offences	17	1	18	12		12			
Other offences	75	14	89	72	14	86			
Total, Class V	1,105	169	1,274	1,069	168	1,237			
GRAND TOTAL	4,039	965	5,004	3,936	937	4,873	10		10

POLICE

The Western Australian Police Force comprises six main branches under the direction of the Commissioner of Police. The Commissioner is responsible to the Minister for Police and is assisted by a Deputy Commissioner.

Four branches, namely the Uniformed Branch, the Criminal Investigation Branch, the Traffic Branch and the Plainclothes Branch, are each headed by an Inspector-in-Charge. The Chief Inspector of Weights and Measures is in charge of the Weights and Measures Branch. The Women Police form the sixth branch.

At the 30th June, 1962, the Police Force had a chief inspector, 34 inspectors, 206 sergeants and 909 constables. Of these, three were detective inspectors, 35 detective sergeants and 53 detective constables. In addition, there were thirteen women police, comprising two sergeants and eleven constables.

The Uniformed Branch comprises the main body of the Police Force and is responsible for the routine maintenance of law and order throughout the State. Where required, officers of the Branch act as Clerks of Courts and perform special duties for other government authorities.

The Criminal Investigation Branch is centred in Perth, with several sub-branches in the metropolitan area and at Albany, Bunbury, Geraldton, Kalgoorlie, Narrogin and Northam. The Branch is equipped with radio patrol cars and the usual facilities for work on fingerprints, photography and ballistics.

Special staffs attached to the Criminal Investigation Branch are responsible for security and for police work in connexion with gold stealing, pillaging and thefts from retail shops.

The Traffic Branch has its principal office in Perth and has four suburban sub-branches. It is responsible for the regulation of traffic and the licensing of motor vehicles in the Metropolitan Traffic Area. In other parts of the State these functions are performed by the local government authorities. Licences to drive motor vehicles are issued by police officers throughout the State. The Traffic Branch is responsible for the patrol of major highways to check commercial vehicles for overloading and for excessive speed. Officers of the Branch instruct school children in the principles of road safety and assist the National Safety Council of Western Australia to conduct a school where young persons are instructed in the proper use of motor cycles. Traffic Education Classes, although held mainly for the instruction of minor offenders against traffic laws, also admit members of the public who attend voluntarily.

The Plainclothes Branch is mainly concerned with the enforcement of the liquor laws and laws for the suppression of vice and gaming. Licensing of firearms is also a responsibility of the Branch.

The Weights and Measures Branch—Officers of the Branch test and verify commercial weighing and measuring instruments and check quantities where goods are pre-packaged for sale.

The Women Police—Policewomen are stationed at Perth, Fremantle and Kalgoorlie. They are mainly employed in police duties concerning women and children.

Police and Citizens' Youth Clubs are established by the Department to provide recreational facilities for young people and to give them an appreciation of civic responsibilities. In 1962, there were seven clubs in the metropolitan area and 21 in country districts, with a total membership of approximately 5,500.

PRISONS

There are two common gaols, at Fremantle and Broome, and seventeen police gaols in Western Australia. There are outstations of the Fremantle Prison at Barton's Mill, Pardelup Prison Farm, and Karnet Rehabilitation and Training Centre at Keysbrook.

Fremantle gaol is divided into separate sections for females, prisoners on remand or awaiting trial, reformatory prisoners and others. There are workshops where prisoners are usefully employed in boot-making, carpentry, printing, tailoring and tinsmithing. A school is conducted by a teacher supplied by the Education Department, while tuition in technical subjects is available by correspondence.

At Barton's Mill, where prisoners are employed in cutting firewood, and at the Pardelup Prison Farm supervision is fairly open. Karnet Rehabilitation and Training Centre, which was officially opened on the 29th March, 1963, is a minimum security institution with accommodation for 60 men in each of two blocks. One block is for the reception of young offenders convicted of criminal offences and the other for convicted inebriates. Inmates in both sections are employed in developing land at the Centre for vegetable growing and orchards and the establishment of pasture for a dairy herd.

Broome gaol is situated in the northern part of the State and is mainly used for the imprisonment of aboriginal natives.

Police gaols are established in Perth and at other centres and are used for short-term prisoners and for prisoners awaiting trial. In addition, provision is made for holding prisoners for short periods at police stations throughout the State.

In the following table, which shows the number of prisoners received for penal imprisonment in gaols in Western Australia during the five years ended 30th June, 1962, a prisoner is counted once for each time he is received.

PRISONERS RECEIVED FOR PENAL IMPRISONMENT

Year	Prisoners other than Aboriginals			Aboriginals			Total Prisoners		
	M.	F.	Total	M.	F.	Total	M.	F.	Total
1957–58	2,680	167	2,847	723	221	944	3,403	388	3,791
1958–59	2,754	173	2,927	719	322	1,041	3,473	495	3,968
1959–60	2,822	181	3,003	785	289	1,074	3,607	470	4,077
1960–61	2,967	168	3,135	797	281	1,078	3,764	449	4,213
1961–62	3,268	149	3,417	868	320	1,188	4,136	469	4,605

In the next table a prisoner is counted only once in a particular year, irrespective of the number of times he is imprisoned during that year.

DISTINCT PERSONS IMPRISONED

Year	Prisoners other than Aboriginals			Aboriginals			Total Prisoners		
	M.	F.	Total	M.	F.	Total	M.	F.	Total
1957–58	1,572	80	1,652	444	109	553	2,016	189	2,205
1958–59	1,554	79	1,633	460	129	589	2,014	208	2,222
1959–60	1,612	86	1,698	479	128	607	2,091	214	2,305
1960–61	1,697	90	1,787	511	149	660	2,208	239	2,447
1961–62	1,903	81	1,984	563	178	741	2,466	259	2,725

The following table shows the number of prisoners, excluding trial and remand prisoners and debtors, in gaols in Western Australia at the 30th June in each of the years 1958 to 1962.

PRISONERS IN GAOL

Date	Prisoners other than Aboriginals			Aboriginals			Total Prisoners		
	M.	F.	Total	M.	F.	Total	M.	F.	Total
30th June :—									
1958	518	9	527	100	4	104	618	13	631
1959	468	9	477	92	15	107	560	24	584
1960	513	13	526	82	17	99	595	30	625
1961	509	17	526	104	15	119	613	32	645
1962	558	15	573	110	23	133	668	38	706

Remission of up to twenty-five per cent. of the sentence imposed is allowed to all prisoners for diligence and good conduct.

Prisoners may be sentenced by a Court to imprisonment for a finite term and thereafter to be detained at the Governor's pleasure. At the expiration of the finite sentence, these prisoners are placed in the reformatory section under the supervision of the Indeterminate Sentences Board. On the other hand, the Court may order that a prisoner be held during the Governor's pleasure without imposing a finite sentence. Such prisoners automatically come under the supervision of the Board. In addition, a prisoner serving a finite sentence may be transferred to the reformatory section on the recommendation of the Board.

The Offenders Probation and Parole Act, 1963 provides for the establishment of a Parole Board, under the chairmanship of a Judge of the Supreme Court, to succeed the Indeterminate Sentences Board.

The following table shows the number of prisoners under the supervision of the Indeterminate Sentences Board during the five years ended 30th June, 1962.

PRISONERS UNDER THE SUPERVISION OF INDETERMINATE SENTENCES BOARD

Year	Placed under Supervision during Year			Under Supervision at 30th June			
	Serving Indeterminate Sentence	Serving Finite Sentence	Total	In Reformatory Prison	On Parole	On Probation	Total
1957–58	13	24	37	47	28	17	92
1958–59	12	20	32	37	37	20	94
1959–60	12	8	20	34	28	23	85
1960–61	19	4	23	27	35	6	68
1961–62	21	10	31	35	32	10	77

CHAPTER VI – FINANCE

PART 1 – PUBLIC FINANCE

In Western Australia there are three groups of authorities responsible for the collection and expenditure of public moneys. They are the State Government and associated semi-governmental authorities, the Commonwealth Government, and the local government authorities, comprising City Councils, Town Councils and Shire Councils.

COMMONWEALTH-STATE FINANCIAL RELATIONS

The Financial Agreement of 1927

Under the terms of the Financial Agreement, the Commonwealth Government took over from the States their public debts existing at the 30th June, 1927 and assumed responsibility for all future loan raisings by the Australian Governments. The Commonwealth also agreed to contribute annually for a period of 58 years from the 1st July, 1927 an amount of £7,584,912 towards the interest payable on the State debts, Western Australia's share of this amount being £473,432. A Sinking Fund, under the control of the National Debt Commission, was created to finance all State debts. In respect of the net public debts of the States at the 30th June, 1927, a contribution of 7s. 6d. per cent. per annum was prescribed, the Commonwealth paying one-third and the States the remaining two-thirds, each according to the amount of its net indebtedness at the date of transfer. All moneys and securities standing to the credit of sinking, redemption and similar funds of the States at the 30th June, 1929 were assigned to the National Debt Commission, except in cases where the conditions relating to a fund precluded a transfer.

In the case of loans raised by a State after the 30th June, 1927 it is provided that, for a period of 53 years from the date of the raising, the sinking fund contribution shall be at the rate of 10s. per cent. per annum shared equally between the Commonwealth and the State. This provision does not, however, apply to loans raised by a State to meet a revenue deficit. In respect of debt incurred in financing deficits accruing after the 30th June, 1927 and before the 1st July, 1935 it was agreed that until the 30th June, 1944 the rate of 10s. per cent. per annum shared equally between the Commonwealth and the State should operate, but that for a period of 39 years from the 1st July, 1944 the annual contribution should be 5s. per cent. from the Commonwealth and 15s. per cent. from the State. For the funding of all other revenue deficits contributions are at a rate of not less than 4 per cent. per annum to be paid wholly by the State.

The Australian Loan Council

The Australian Loan Council was established by the Financial Agreement Act of 1928 to co-ordinate the public borrowings of the Commonwealth and the States. The Council has as its Chairman the Prime Minister of the Commonwealth, or a Minister nominated by him, and the other members are the Premiers of the States or, in the absence of a Premier, a Minister nominated by him. The Commonwealth and each State submits to the Council a programme of its desired loan raisings during each financial year, including the amount of any revenue deficit to be funded. The Commonwealth Government's borrowings for defence purposes are expressly excluded from its submissions to the Council. If the Council decides that the total amount of the loan programme for a year cannot be borrowed at reasonable rates and conditions it decides the amount to be borrowed during the year, and may by unanimous decision allocate this amount between the Commonwealth and the States. Where the members fail to arrive at a unanimous decision the Commonwealth is entitled to a maximum of one-fifth of the total sum to be borrowed. Of the balance, each State is entitled to an amount in the proportion which its net loan expenditure during the preceding five years bears to the aggregate for all the States.

The Commonwealth Grants Commission

Section 96 of the Commonwealth Constitution provides that the States may be granted financial assistance and Western Australia, as one of the States experiencing peculiar financial disabilities under Federation, has regularly received assistance under this provision. In 1933 the Commonwealth Parliament passed the Commonwealth Grants Commission Act establishing a Commission of three members to inquire into and report on applications made by States for grants of financial aid. During the initial

period of its work the Commonwealth Grants Commission considered compensation for disabilities arising from Federation as a possible basis upon which its recommendations should be made. It considered also the basis of financial need. In its Third Report, submitted in 1936, the Commission finally rejected the principle of compensation for disabilities arising from Federation, and chose instead the principle of financial need, having come to the conclusion that " special grants are justified when a State through financial stress from any cause is unable efficiently to discharge its functions as a member of the Federation and should be determined by the amount of help found necessary to make it possible for that State by reasonable effort to function at a standard not appreciably below that of other States." Another essential feature of special grants, noted in the Commission's Second Report, is that they are " continuous in principle with other transfers of Commonwealth revenue to the States. They should be the amount required to complete the work begun by other transfers, and to reduce the financial inequality of the States sufficiently for the harmonious and effective working of Federal Government."

In each year from 1934–35, in respect of which the Commission made its first recommendation, Western Australia's application has resulted in a special grant. The amounts received in 1957–58 and 1958–59, after authorization by the Commonwealth Parliament under a States Grants Act, and in each year from 1959–60 to 1961–62, under a States Grants (Special Assistance) Act is shown against the item " Special Grants " in the table on page 199.

Tax Reimbursements

With the passage of enabling legislation in 1942, the Commonwealth Government became the sole taxing authority in the field of income tax. At the time of introduction of this " uniform tax scheme," Western Australia was levying three separate taxes on incomes. These were income tax on individuals and on companies, a hospital fund contribution and a tax on the profits of gold-mining companies. The States Grants (Income Tax Reimbursement) Act of 1942 provided for the payment to each State of a fixed annual amount by way of financial assistance to compensate for loss of revenue from income tax. The Act was repealed in 1946 by the States Grants (Tax Reimbursement) Act which prescribed a fixed grant for each of the financial years 1946–47 and 1947–48 and, for subsequent years, an amount to be varied in accordance with changes in population and in average wages per person employed.

Special and Additional Financial Assistance

With the increasing financial needs of the States it became necessary for the Commonwealth Government to make grants in excess of those prescribed by the States Grants (Tax Reimbursement) Act 1946–1948. Financial aid was extended by a States Grants (Special Financial Assistance) Act passed in each year from 1951 to 1958 and by the States Grants (Additional Assistance) Acts of 1958 and 1962.

Financial Assistance Grants

The States Grants Act 1959 repealed the States Grants (Tax Reimbursement) Act and provided for a new system of annual payments which are described as " Financial Assistance Grants." The Act incorporates an arrangement, unanimously agreed to by the States at a Premiers' Conference in June, 1959, which is designed to eliminate the need for supplementary grants in the form of Special Financial Assistance and to reduce to a marginal level the special grants provided for under the Commonwealth Grants Commission Act 1933–1957.

The amount of the Financial Assistance Grant to Western Australia for 1959–60, the first year of operation of the scheme, was prescribed by the Act as £25,462,000. The grant is essentially a *per capita* payment, which varies as between States. For each year subsequent to 1959–60, this *per capita* payment is increased, if average wages paid in Australia as a whole increased in the preceding year, by a percentage equal to 1·1 times the percentage rise in average wages. By this means, not only are the effects on State finances of population changes and wage increases taken into account but a " betterment factor " is also introduced to enable a State Government to extend the range or improve the standard of its services.

The Act provides that the system may be reviewed in relation to grants for any year subsequent to 1964–65.

Other Financial Assistance

As well as providing general financial assistance to the States by means of grants, the Commonwealth Government has allocated to them funds for specific purposes. These include moneys for roads (see letterpress, Chapter IX, Part 2), the tuberculosis campaign (Chapter V, Part 5), mental institutions (Chapter V, Part 5), universities (Chapter V, Part 1) and also, in the case of Western Australia, for waterworks (Chapter VII, Part 2) and the development of the part of the State north of 20°S. latitude (Chapter

VII, Part 2). These payments, together with various forms of assistance to industries and contributions for the relief of natural disasters, are made from the Consolidated Revenue Fund. In addition, finance for housing (see letterpress, Chapter V, Part 4) is provided from Loan Fund, for social services and health services (Chapter V, Part 5) from the National Welfare Fund, for war and service pensions (Chapter V, Part 5) from Consolidated Revenue and for war service land settlement (Chapter VII, Part 1) from Consolidated Revenue and from Loan Fund.

FINANCIAL ASSISTANCE TO WESTERN AUSTRALIA

Consolidated Revenue Fund

The following table gives particulars of payments made by the Commonwealth Government from Consolidated Revenue Fund to or on behalf of the Government of Western Australia, as well as payments to industry in the form of subsidy or bounty, in each of the financial years 1957–58 to 1961–62. The items included are those dealt with in the corresponding paragraphs of the preceding section *Commonwealth-State Financial Relations.*

COMMONWEALTH CONSOLIDATED REVENUE FUND
FINANCIAL ASSISTANCE TO WESTERN AUSTRALIA

Nature of Payment	Financial Year				
	1957–58	1958–59	1959–60	1960–61	1961–62
PAID TO OR FOR STATE GOVERNMENT	£	£	£	£	£
Financial Agreement—					
Interest on State Debts	473,436	473,432	473,428	473,432	473,432
Sinking Fund on State Debts	497,313	526,288	578,401	608,915	652,779
Special Grants (*a*)	10,150,000	11,100,000	3,500,000	4,309,000	6,156,000
Tax Reimbursement Grants	13,061,264	13,773,042			
Special Financial Assistance	1,901,825	2,401,520			
Additional Financial Assistance	315,062				(*b*) 660,000
Financial Assistance Grants			25,462,000	27,976,975	30,085,423
Commonwealth Aid Roads—					
Grants	6,183,000	6,491,802	7,611,449	7,387,098	7,712,076
Special Assistance	475,000	475,000			
Additional Grants			351,591	703,533	1,051,647
Tuberculosis Act—Reimbursement of Capital Expenditure	682,997	257,164	39,198	21,513	11,890
Mental Institutions—Contribution to Capital Expenditure	29,236	17,210	36,799	15,276	77,022
Grants for Universities	253,045	612,605	630,910	903,116	993,961
Western Australia Waterworks Grant	676,766	524,377	608,541	516,517	61,298
Development of North Western Australia		170,766	484,151	1,207,571	1,705,194
Encouragement of Meat Production	5,000			2,000	3,000
Beef Cattle Roads Grant					500,000
Tobacco Industry Assistance	3,750	3,750			
Dairy Industry Extension Grant	14,762	13,250	10,648	13,000	17,400
Expansion of Agricultural Advisory Services	27,000	22,486	21,855	27,000	26,998
Natural Disaster Payments				32,625	(*c*) 193,273
Other Payments	29,628	27,333	23,666	16,029	15,201
Total	34,779,084	36,890,025	39,832,637	44,213,600	50,396,594
SUBSIDIES AND BOUNTIES					
Subsidies—					
Dairy Industry	545,000	450,000	455,000	585,000	520,000
Gold-mining Industry	525,237	755,090	728,740	589,709	549,363
Bounties—					
Tractor	129,100	172,599	371,767	341,389	319,275
Sulphuric Acid	95,458	211.156	280,268	265,568	195,578
Pyrites				19,026	77,006
Flax Fibre	4,050	19,574	14,249	6,112	12,118
Copper		6,201	4,254	647	11,260
Total	1,298,845	1,614,620	1,854,278	1,807,451	1,684,600
GRAND TOTAL	36,077,929	38,504,645	41,686,915	46,021,051	52,081,194

(*a*) See letterpress *The Commonwealth Grants Commission* on pages 197–8. (*b*) Represents Western Australia's share of grant of £10 million made to the States, under the provisions of the States Grants (Additional Assistance) Act 1962, for the stimulation of employment. (*c*) Includes an amount of £33,273 in respect of personal relief.

National Welfare Fund

The National Welfare Fund was established in 1943 by the National Welfare Fund Act passed by the Commonwealth Parliament in that year. The purpose of the Fund is to provide for the payment of social service and health benefits. From 1952–53, the Fund has been financed by the transfer each year from Consolidated Revenue of a sum equal to the amount paid out during the year. Its principal sources of revenue had previously been Pay-roll Tax collections and the Social Services Contribution which until 1950–51 was levied as a separate tax upon incomes but is now amalgamated with the normal Income Tax.

NATIONAL WELFARE FUND—PAYMENTS IN WESTERN AUSTRALIA (*a*)

Pension or Benefit	Financial Year				
	1957–58	1958–59	1959–60	1960–61	1961–62
	£	£	£	£	£
Social Services—					
Age and Invalid Pensions	8,077,093	8,622,166	9,916,337	10,793,190	12,171,972
Rehabilitation Service	79,428	93,322	85,370	79,243	78,676
Funeral Benefits	23.482	23,244	24,153	25,945	25,989
Widows' Pensions	707,480	800,460	913,589	1,051,952	1,185,604
Unemployment and Sickness Benefits—					
Unemployment	482,735	*654,160	*564,492	479,159	726,082
Sickness	130,959	159,230	163,528	153,348	190,706
Special	18,696	*23,337	*23,897	22,196	26,705
Maternity Allowances	271,032	266,760	274,816	283,966	279,444
Child Endowment	4,571,540	5,197,754	4,859,840	5,701,075	5,102,478
National Health Services—					
Hospital Benefits—					
Ordinary	644,149	720,164	740,266	757,225	780,274
Additional	285,032	565,493	793,818	906,798	976,631
Special Account Deficits (*b*)			141,604	244,724	241,221
Medical Benefits—					
Ordinary	656,813	699,802	842,856	851,831	921,371
Special Account Deficits (*b*)			3,384	33,003	20,336
Medical Benefits for Pensioners	216,113	258,836	274,503	284,890	286,006
Pharmaceutical Benefits	863,884	1,221,487	1,337,231	1,316,042	1,794,685
Pharmaceutical Benefits for Pensioners	139,282	175,557	251,829	499,163	609,797
Nutrition of Children	152,600	182,249	228,797	224,052	263,067
Tuberculosis Campaign—					
Allowances	76,109	78,084	70,230	57,427	39,989
Maintenance (*c*)	444,410	557,969	511,505	498,306	396,638
Miscellaneous (*b*)	12,975	14,334	17,237	19,330	17,298
Rental Rebates (*d*)		25,000		123,179	
TOTAL	17,853,812	20,339,408	22,039,282	24,406,044	26,134,969

(*a*) For conditions applying to payment of social service and health benefits, see Chapter V Part 5. (*b*) See letterpress *National Health Services*, Chapter V Part 5. (*c*) Fignres exclude payments and reimbursements from Consolidated Revenue Fund in respect to capital expenditure by the State Government. See preceding table. (*d*) Represents an interim payment towards the Commonwealth's contribution of three-fifths of rental losses incurred under the Commonwealth and State Housing Agreement Act 1945 (see letterpress *Operations under the Commonwealth and State Housing Agreement*, Chapter V Part 4). * Revised.

COMMONWEALTH TAXATION COLLECTIONS IN WESTERN AUSTRALIA

The taxes levied in Western Australia by the Commonwealth Government are listed in the following table. Reference to Customs and Excise Duties is made in Chapter IX, Part 1. The rates and conditions relating to the imposition of other duties, taxes and charges are summarized in the *Pocket Year Book of Western Australia* and in the *Official Year Book of the Commonwealth of Australia.*

It is important to note that, although the figures shown in the table represent the amounts of taxes actually collected in Western Australia, they do not necessarily indicate the amounts contributed by the people of the State, as moneys may be collected in one State in respect of goods consumed or assessments made in other States. Further, administrative arrangements for the collection of certain taxes are such that a large proportion of the revenue (or, as in the case of Wheat Tax, the whole of the revenue) is brought to account in a State other than Western Australia.

COMMONWEALTH TAXATION—NET COLLECTIONS IN WESTERN AUSTRALIA

Tax, Duty, Charge or Levy	Financial Year				
	1957–58	1958–59	1959–60	1960–61	1961–62
	£	£	£	£	£
Customs Duties	2,590,594	2,202,278	2,664,410	3,556,260	3,414,557
Excise Duties	16,120,407	16,075,070	16,761,681	16,856,459	17,817,696
Sales Tax	6,869,322	7,176,057	8,694,910	9,420,048	8,822,954
Income Tax and Social Services Contribution	29,586,257	27,874,728	29,818,902	36,520,833	41,304,420
Pay-roll Tax	2,795,843	2,830,333	3,030,006	3,352,249	3,507,111
Estate Duty	629,457	432,809	530,775	498,951	774,774
Gift Duty	159,231	152,142	132,701	143,819	128,788
Wool Tax (*a*)	135,994	147,719	152,603	196,483	315,672
Stevedoring Industry Charge (*a*)	319,771	439,712	360,740	402,113	382,225
Export Charges on Primary Products (*a*)	12,725	20,372	18,581	30,611	21,960
Tobacco Charge (*a*)	1,920	2,455	3,248	3,486	1,654
Dairy Produce Levy (*a*)		2,879	11,524	14,390	14,667
Canning-Fruit Charge (*a*)			23	36	67
Cattle Slaughter Levy (*a*)				6,772	13,734
TOTAL	59,221,521	57,356,554	62,180,104	71,002,510	76,520,279

(*a*) Paid to Trust Funds or relevant authorities and used for the purposes of the industry concerned.

STATE GOVERNMENT FINANCE

Moneys collected and expended by the State Government are dealt with through accounts based on funds of three types, the Consolidated Revenue Fund, the General Loan Fund and Trust Funds. The transactions of these Funds are summarized in the Public Accounts prepared each year by the Treasurer and in the Financial Statement presented to the Parliament by the Treasurer in introducing the annual budget.

Consolidated Revenue Fund

All State revenues, apart from those which are credited to trust or special accounts, are paid into the Consolidated Revenue Fund. Disbursements from the Fund are authorized by the Parliament, each year under an Appropriation Act, or under Special Acts subject to periodical review. Among the permanent appropriations by Special Acts are such items as the salaries of the Governor, the Judges of the Supreme Court and Members of Parliament, interest charges on the public debt, contributions to the Public Debt Sinking Fund, payments to the State Superannuation Fund and the annual subsidy to the University of Western Australia.

The principal sources of revenue, as shown in the following table, are the grants and other financial assistance received from the Commonwealth Government ; the income of public utilities ; departmental revenues from reimbursements, fees and services ; taxation ; and territorial revenues.

The payments made to Western Australia by the Commonwealth Government from Consolidated Revenue during each of the years from 1957–58 to 1961–62 appear in the table on page 199. Not all of these moneys are paid to the State Consolidated Revenue Fund, as some of them are provided for specific purposes and are therefore paid to trust or other accounts.

CONSOLIDATED REVENUE FUND—SOURCES OF REVENUE

Nature of Revenue	Financial Year				
	1957–58	1958–59	1959–60	1960–61	1961–62
	£	£	£	£	£
Collected by the State—					
Taxation	(a) 5,366,954	(a) 5,184,153	5,917,223	6,039,256	6,463,169
Territorial Revenues (b)	1,258,135	1,391,548	1,438,943	1,398,309	1,641,331
Public Utilities—					
Railways, Tramways and Omnibuses (c)	13,833,375	14,435,914	15,662,491	16,278,415	16,825,366
Water Supplies, Sewerage and Drainage	3,143,537	3,301,572	3,341,915	3,874,919	4,152,835
Other Public Utilities	285,738	302,549	282,997	261,669	250,021
Departmental Revenue—Reimbursements, Fees, etc.	6,819,805	7,261,009	7,848,174	8,186,039	8,274,409
Other	444,846	443,498	460,741	534,696	603,799
Total	31,152,390	32,320,243	34,952,484	36,573,303	38,210,930
Received from the Commonwealth (d)—					
Interest on State Debts	473,436	473,432	473,428	473,432	473,432
Special Grants	10,150,000	11,100,000	3,500,000	4,309,000	6,156,000
Tax Reimbursement Grants	13,061,264	13,773,042			
Special Financial Assistance	1,901,825	2,401,520			
Additional Financial Assistance	315,062				
Financial Assistance Grants			25,462,000	27,976,975	30,085,423
Total	25,901,587	27,747,994	29,435,428	32,759,407	36,714,855
GRAND TOTAL	57,053,977	60,068,237	64,387,912	69,332,710	74,925,785

(a) Figures include small amounts representing arrears of State income taxes collected by the Commonwealth. For net amounts collected, see table *Net Collections of State Taxation* on page 202. (b) Comprises revenue from sales, leases and licences relating to lands, timber and mining. (c) From 1960–61, figures consist of Railways revenue only. (d) See table on page 199.

More than one-half of the revenue collected by the State comes from public utilities, predominant among which are transport undertakings owned and operated by the Government. Next in importance in earnings from public utilities is the income from water supplies, which include the metropolitan and country areas systems and sewerage, drainage and irrigation services.

Departmental revenues amount to more than one-fifth of all receipts, the main contributing Departments in 1961–62 being Treasury (£4,307,664, including £3,718,068 on account of interest and sinking funds), Harbour and Light (£666,652), Forests (£353,073), Printing (£340,534), Public Works (£313,119), Agriculture (£289,717) and Police (£247,782).

Although the figures appearing against the item " Taxation " are described as having been " collected by the State," the amounts shown for the years 1957–58 and 1958–59 do, in fact, include small sums representing arrears of State income taxes collected by the Commonwealth. Otherwise they comprise Consolidated Revenue Fund receipts from probate and succession duties, stamp duties, land tax, entertainments tax, liquor licences, totalisator duty and licences, bookmakers' turnover tax, bookmakers' licences, Totalisator Agency Board betting tax, betting investment tax and certain other licences. Some account of the rates and conditions applying to these and other levies is given in the *Pocket Year Book of Western Australia.*

Territorial revenues are those derived from sales of Crown land and the issue of leases, licences and permits in connexion with land, mining and timber. Reference to the several types of tenure in these categories will be found in Chapter VII, Part 1—*Land Tenure and Settlement.*

The following table gives details of net collections of State taxation. Payments to trust or special accounts as well as to Consolidated Revenue are shown. The collections are grouped according to the nature of the tax rather than the method of collection. Thus stamp duties on betting tickets and revenue from bookmakers' licences and totalisator licences are included under the heading " Racing " and not under " Stamp Duties " or " Licences." It will be seen that, although the figures represent net collections, the aggregates of the amounts shown as payments to the Consolidated Revenue Fund generally exceed those appearing as taxation revenue (gross) in the preceding table. This is accounted for by the fact that some types of licences are not included under the heading of taxation in the Public Accounts, earnings from them being credited to departmental revenue. One of the items dealt with in this way is that shown as " Motor Vehicle " taxation in the first part of the table. Others are licences relating to firearms ; factories and shops ; fishing, pearling and game ; explosives ; and marine collectors.

NET COLLECTIONS OF STATE TAXATION

Nature of Tax	Financial Year				
	1957–58	1958–59	1959–60	1960–61	1961–62
Paid to Consolidated Revenue Fund—	£	£	£	£	£
Probate and Succession Duties	1,083,036	1,083,867	1,285,472	1,407,237	1,509,089
Stamp Duties not elsewhere included	1,415,791	1,480,695	1,786,919	1,956,321	2,120,015
Land	(a)1,402,003	1,220,759	1,285,168	1,071,545	1,249,022
Income (Arrears)	2,338	81			
Entertainments	285,033	291,107	268,814	139,363	53,769
Liquor Licences	422,755	446,341	456,162	503,028	528,686
Racing	718,804	626,951	791,405	846,932	894,385
Motor Vehicle—					
Drivers' and Riders' Licences and Fees (b)	128,814	137,562	(c) 17,158	(c) 19,068	(c) 16,113
Transport Department Licences (c)	220	110			
Licences not elsewhere included	62,414	64,758	67,993	71,557	98,397
Total	5,521,208	5,352,231	5,959,091	6,015,051	6,469,476
Paid to Trust or Special Accounts—					
Motor Vehicle—					
Registration Fees (d)	1,984,026	2,102,354	2,431,030	2,690,455	2,877,398
Drivers' and Riders' Licences (e) (f)			164,863	263,377	275,324
Passenger and Carriers' Licences	18,858	19,562	20,340	20,620	21,267
Transport Department Licences (e)	92,650	65,011	60,136	71,784	81,039
Other Vehicle Registration Fees	2,464	1,785	1,840	2,782	2,825
Land	(a) 100,000				
Metropolitan Region Improvement			210,593	221,217	235,531
Vermin—					
Fruit Fly Eradication	11,626	11,567	16,895	17,161	17,004
Other	(g) 2,346	77,864	113,435	109,797	121,642
Total	2,211,970	2,278,143	3,019,132	3,397,193	3,632,030
GRAND TOTAL	7,733,178	7,630,374	8,978,223	9,412,244	10,101,506

(a) For 1957–58, total net collections of Land Tax were £1,502,003 from which £100,000 was paid to the Vermin Act Trust Account under the provisions of the Vermin Act Amendment Act (No. 2), 1956. (b) Includes Conductors' Licences. (c) Part collections only ; for amounts paid to Trust or Special Accounts, see below. (d) For purposes of comparison with other States, fees collected and retained by local government authorities outside the Metropolitan Traffic Area have been treated as State Taxation and included here. See also table *Summary of Local Government Revenue* on page 210. (e) Part collections only ; for amounts paid to Consolidated Revenue Fund, see above. (f) See letterpress *Finance for Roads*, Chapter IX, Part 2. (g) See note (a).

Expenditure from the Consolidated Revenue Fund in each of the financial years 1957–58 to 1961–62 is shown in the following table.

CONSOLIDATED REVENUE FUND
EXPENDITURE ACCORDING TO NATURE OF SERVICE

Nature of Expenditure	Financial Year				
	1957–58	1958–59	1959–60	1960–61	1961–62
	£	£	£	£	£
Expenditure on Public Utilities—					
Railways, Tramways and Omnibuses (*a*)	17,098,306	17,111,289	17,878,818	16,865,623	17,253,652
Water Supplies, Sewerage and Drainage	2,541,471	2,617,923	2,900,221	3,240,607	3,381,144
Other	411,844	429,227	430,027	429,767	413,933
Total	20,051,621	20,158,439	21,209,066	20,535,997	21,048,729
Departmental Expenditure—					
Agriculture	828,800	865,282	973,631	1,054,859	1,187,053
Child Welfare and Outdoor Relief	633,410	718,330	653,541	734,705	764,302
Crown Law	*518,583	*537,675	*605,610	659,677	724,086
Education	7,586,227	7,909,615	8,640,807	9,770,492	10,708,660
Forests (*b*)	391,263	369,500	404,700	409,732	445,860
Harbour and Light and Jetties	233,080	235,988	277,058	398,066	439,653
Lands and Surveys	764,361	770,334	826,819	879,977	930,357
Mental Health Services	888,920	935,152	1,059,248	1,178,525	1,248,398
Metropolitan (Perth) Passenger Transport Trust—Loss			48,917	456,000	606,000
Mines	412,702	414,175	461,400	528,104	580,839
Native Welfare	518,766	580,763	625,149	750,766	1,288,808
Police	1,676,188	1,755,896	1,921,498	1,979,677	2,063,663
Printing	434,427	473,724	496,826	518,668	554,930
Public Health	4,624,298	5,048,354	5,723,062	5,729,591	6,219,255
Public Works and Buildings	1,506,426	1,536,200	1,636,149	1,738,956	1,888,822
State Shipping Service—Loss	728,859	963,145	911,898	1,024,707	1,055,885
Treasury	156,357	156,778	167,815	165,723	142,373
University of Western Australia—Additional Payments (*b*)	363,339	435,740	472,103	597,454	706,681
Other	*3,619,257	*4,808,597	*4,447,508	6,284,051	6,686,286
Total	25,885,263	28,515,248	30,353,739	34,859,730	38,241,911
Expenditure under Special Acts—					
Forests Act (*c*)	757,768	775,047	762,602	784,623	902,352
Loan Acts (Public Debt)—					
Interest	7,941,711	8,545,825	9,428,506	10,060,344	11,135,425
Sinking Fund Contributions	1,709,825	1,876,104	2,097,872	2,253,696	2,489,497
Parliamentary Allowances	190,875	190,960	193,423	196,265	194,833
Superannuation Acts—Government Employees	926,870	963,319	975,922	1,043,632	1,049,161
University of Western Australia Act (*c*)	250,000	250,000	250,000	250,000	250,000
Other	373,122	383,491	417,856	445,662	463,108
Total	12,150,171	12,984,746	14,126,181	15,034,222	16,484,376
Other Expenditure	90,252	94,537	104,740	107,337	114,782
GRAND TOTAL	58,177,307	61,752,970	65,793,726	70,537,286	75,889,798

(*a*) From 1960–61, figures consist of Railways expenditure only. (*b*) For expenditure under Special Acts, see below. (*c*) For additional payments, see Departmental Expenditure above. * Revised.

Approximately one-half of the total represents expenditure under the heading " Departmental," and of this more than two-fifths is attributable to Education and Public Health. Further large sums are accounted for by Police, Public Works and Buildings, Mental Health Services and Agriculture. Other significant items are losses incurred by the State Shipping Service and the Metropolitan (Perth) Passenger Transport Trust. By a provision of the State Trading Concerns Act of 1917, any loss sustained by a Concern is to be treated in such manner as the Treasurer shall direct and it has been the practice to make good from Consolidated Revenue the losses of the State Shipping Service. Losses of the Metropolitan (Perth) Passenger Transport Trust, which began transport operations on the 1st September, 1958, have similarly been recouped from the Consolidated Revenue Fund. The Trust's losses to the 30th June, 1962 aggregated £1,132,310, and of this amount £1,110,917 had been recouped from the Fund.

Expenditure on public utilities amounts to more than one-quarter of the total, the predominant item being transport undertakings.

Commitments under Special Acts account for about one-fifth of all expenditure. The principal amounts relate to Loan Acts and are applied to interest charges on the public debt and contributions to the Public Debt Sinking Fund. Another large item is expenditure incurred under the Superannuation and Family Benefits Act, 1938–1962 and other legislation providing pensions for government employees.

The amount paid under the Forests Act, 1918–1954 represents nine-tenths of the net annual revenue of the Department and is credited to a fund for forests improvement and reforestation. The University of Western Australia Act, 1911–1957 provides for the payment of an annual subsidy of £250,000 and " such additional amounts as may be appropriated by Parliament from time to time." In 1961–62 additional payments amounting to £706,681 were made from Departmental Expenditure. Further details of University finance are given in Chapter V, Part 1.

The particulars shown in the preceding table and in the table on page 201 are an abridged form of the presentation given in the Public Accounts. It is, of course, possible to present the figures of income and expenditure of the Consolidated Revenue Fund on other bases for particular purposes. One such grouping is a dissection according to function as in the following table. The classification used is one which was devised by the Conference of Australian Statisticians and has been summarized for the purposes of this table from a more detailed statement appearing in the *Statistical Register of Western Australia—Part II, Public Finance.*

The table is designed to show (in respect to the Consolidated Revenue Fund only) the gross and net cost of each function of Government irrespective of the Department or Departments administering these functions. In cases where an activity is such that it involves more than one function, each of its components has been included in that function which is considered to be the most appropriate. For example, in classifying revenue and expenditure attributable to the care of aboriginals, the education of natives is included in " Education," and hospitals for natives in " Public Health," only the balance being assigned to the item " Welfare."

CONSOLIDATED REVENUE FUND
REVENUE AND EXPENDITURE CLASSIFIED ACCORDING TO FUNCTION

Function	Financial Year					
	1960–61			1961–62		
	Revenue	Expenditure		Revenue	Expenditure	
		Gross	Net		Gross	Net
	£	£	£	£	£	£
Legislation		448,522	448,522	250	547,536	547,286
General Administration and Services, not elsewhere included	39,306,734	2,489,237	Cr.36,817,497	43,890,423	2,982,730	Cr.40,907,693
Law, Order and Public Safety	601,271	3,137,818	2,536,547	644,673	3,280,560	2,635,887
Education	231,217	11,372,992	11,141,775	262,240	12,645,380	12,383,140
Cultural and Recreational Facilities	909	442,075	441,166		530,723	530,723
Public Health	747,542	7,860,923	7,113,381	314,142	8,112,761	7,798,619
Welfare	427,185	1,946,524	1,519,339	435,163	2,117,598	1,682,435
War and Defence		14,896	14,896		9,951	9,951
Immigration		22,879	22,879		38,384	38,384
Regulation of Trade and Industry and Industrial Safety	100,111	252,800	152,689	107,109	262,357	155,248
Development and Conservation of National Resources and Assistance to Industry	6,606,179	9,123,102	2,516,923	7,279,485	9,833,934	2,554,449
Transport and Communication	16,883,658	19,229,630	2,345,972	17,577,470	20,009,202	2,431,732
Housing	6,104	14,205	8,101	6,216	20,779	14,563
Banking and Insurance	60,514	21,293	Cr. 39,221	31,768	23,685	Cr. 8,083
Public Debt Charges	4,361,286	(a)12,881,030	8,519,744	4,376,846	(a)14,246,086	9,869,240
Miscellaneous		1,279,360	1,279,360		1,228,132	1,228,132
TOTAL	69,332,710	70,537,286	(b) 1,204,576	74,925,785	75,889,798	(b) 964,013

(a) Comprises the amounts shown under " Loan Acts (Public Debt) " in the preceding table and exchange on interest payments and other charges aggregating £566,990 in 1960–61 and £621,164 in 1961–62. (b) Budget deficit.

The amount shown as revenue under the heading " General Administration and Services, not elsewhere included " is nearly three-fifths of the total. The item includes receipts from the Commonwealth in the form of Special Grants and Financial Assistance Grants as well as Taxation collected by the State (see table on page 201), amounting in all to £38,325,231 in 1960–61 and £42,704,592 in 1961–62.

By a provision of the State Government Insurance Office Act, 1938–1958 the State Government Insurance Office is required to pay each year to the Treasury the equivalent of the amount of State taxes

on profits or income that any insurance company, other than a life insurance company, would be liable to pay. The amounts shown as revenue under Banking and Insurance include sums of £46,158 for 1960–61 and £24,867 for 1961–62 in relation to such payments. The expenditure under the heading of Banking and Insurance comprises mainly reimbursements from the Treasury to the Rural and Industries Bank of Western Australia of administration expenses incurred in the conduct of its Government Agency Department. These recoups amounted to £18,663 in 1960–61 and £20,191 in 1961–62.

General Loan Fund and Public Debt

General Loan Fund—The first Loan Act in Western Australia was assented to in 1872 and gave authority for the raising of a loan for public works, mainly in connexion with harbours and rivers, for the purchase of the Perth-Fremantle telegraph line and for railway surveys in the Champion Bay district. A General Loan Fund was established by the Loans Consolidation Act of 1896 which provided for the merging in the Fund of all loan balances unexpended at the 30th June, 1896, and since that time the proceeds of each new loan have been paid to the credit of the General Loan Fund.

The principal net expenditures from the General Loan Fund during the five years ended 30th June, 1962 were those relating to Water Supplies, Sewerage and Drainage (£23,450,984), Public Buildings (£22,266,737), Railways, Tramways and Omnibuses (£12,263,734), Housing (£6,241,918), Harbours and Rivers (£4,376,205) and Electricity Supply (£3,466,506).

NET LOAN EXPENDITURE

Nature of Expenditure	From 1872 to 30th June, 1957	Financial Year					From 1872 to 30th June, 1962
		1957–58	1958–59	1959–60	1960–61	1961–62	
	£	£	£	£	£	£	£
Public Works, Services, etc.—							
Railways, Tramways and Omnibuses	63,118,562	2,104,682	2,855,615	2,476,645	2,110,724	2,716,068	75,382,296
Electricity Supply	17,606,979	1,240,000	1,100,000	776,506	200,000	150,000	21,073,485
Harbours and Rivers	15,011,396	699,109	713,790	686,717	983,061	1,293,528	19,387,601
Public Buildings—							
Schools	9,957,763	1,651,381	1,777,206	2,106,332	2,717,778	2,868,996	21,079,456
Hospitals	6,784,554	894,828	1,123,006	1,368,137	1,747,272	2,217,642	14,135,439
Other	2,177,492	399,099	804,758	886,791	774,387	929,124	5,971,651
Housing (*a*)	8,914,594	1,149,387	1,353,011	1,243,502	1,145,423	1,350,595	15,156,512
Water Supplies, Sewerage and Drainage	40,330,809	3,847,128	4,197,363	4,773,572	5,156,966	5,475,955	63,781,793
Development of Goldfields and Mineral Resources	6,343,348	517,394	442,431	226,476	164,970	77,247	7,771,866
Development of Agriculture	26,813,290	161,821	218,948	202,626	264,947	284,859	27,946,491
Miscellaneous	24,757,560	1,470,956	1,584,997	1,504,718	2,443,278	1,511,569	33,273,078
Total	221,816,347	14,135,785	16,171,125	16,252,022	17,708,806	18,875,583	304,959,668
Other Expenditure—							
Discounts and Flotation Expenses	7,726,760	Cr. 200,398	Cr. 680,683	Cr. 415,415	Cr.1,020,134	Cr. 431,498	4,978,632
Revenue Deficits	12,796,762	1,508,831	570,368	1,432,330	845,733	559,814	17,713,838
Total	20,523,522	1,308,433	Cr. 110,315	1,016,915	Cr. 174,401	128,316	22,692,470
GRAND TOTAL	242,339,869	15,444,218	16,060,810	17,268,937	17,534,405	19,003,899	327,652,138

(*a*) Excludes expenditure from Commonwealth loans under Commonwealth-State Housing Agreement. See letterpress, Chapter V Part 4.

Expenditure on Water Supplies, Sewerage and Drainage included the cost of work on the Comprehensive Water Supply Scheme, the main dam at Serpentine and associated reticulation works, the raising of the wall of Wellington Dam, the Ord River diversion dam, a weir on the Fitzroy River for the Liveringa project, developmental and improvement work in irrigation districts, sewerage works construction and extension of services in the metropolitan area and in country towns and water supplies for towns and stock routes in northern and north-western areas. An account of progress in the field of water conservation and supply is given in Chapter VII, Part 2.

Of the total expenditure of £22,266,737 on Public Buildings, £11,121,693, or approximately one-half, was spent on the construction of new schools and additions or improvements to existing schools. Work on the completion of a regional hospital at Albany and the provision of new or improved hospitals in both metropolitan and country areas accounted for £7,350,885. Other expenditure included

the cost of work on the construction of a new Government Printing Office, a reformatory institution for boys at Caversham, extensions to Parliament House and the Supreme Court building and the erection of new court houses and police stations at a number of centres.

Expenditure under the heading of Railways, Tramways and Omnibuses included the cost of new rolling stock, maintenance and renewals of permanent way, the construction of a new railway bridge over the Swan River at North Fremantle and land resumptions for proposed marshalling yards at Welshpool. Advances were made to the Metropolitan (Perth) Passenger Transport Trust for the acquisition of transport services, the purchase of new omnibuses and the construction of workshops and an administrative headquarters. Reference is made to the operations of the Trust in Chapter IX, Part 2.

The amounts shown under the heading of Housing consist mainly of additional capital provided to the State Housing Commission for the erection of houses, land acquisition and development and assistance to home builders. The expenditure, which relates only to the General Loan Fund, does not, of course, include moneys applied to the Commission's purposes from Commonwealth loans under the Commonwealth-State Housing Agreement. Reference to the Agreement and to the work of the State Housing Commission will be found in Chapter V, Part 4.

The principal works under the heading of Harbours and Rivers were those undertaken at the Port of Fremantle, including the building of a new passenger terminal, the reconstruction of quays, dredging and the installation of new mechanical equipment. Among other works were improvements to the berthing facilities and the extension of the breakwater at Bunbury, harbour improvements at Albany and Geraldton and at ports on the north and north-west coasts and the construction of fishing-boat harbours at Fremantle and Geraldton.

Expenditure attributed to Electricity Supply includes amounts spent by the State Electricity Commission on power stations at East Perth and Bunbury, the development of the South-West Power Scheme and the conversion of metropolitan consumers' equipment and appliances necessitated by a change in frequency from 40 cycles to 50 cycles. The figures do not represent all of the Commission's expenditure as they refer only to the General Loan Fund and therefore exclude moneys available to the Commission from its own public loan raisings. The activities of the State Electricity Commission are described in Chapter VIII, Part 2.

Expenditure on the Development of Goldfields and Mineral Resources refers to moneys spent on assistance to prospectors, loans to mine owners, drilling in connexion with mineral exploration, hydrological drilling and miscellaneous works at various State Batteries. It also includes advances on account of the Wundowie Charcoal Iron and Steel Industry for completion of a new blast furnace and improvements and extensions to the existing plant.

Expenditure under the heading of Development of Agriculture includes the cost of a new administrative building and laboratories for the Department of Agriculture at South Perth, improvements to research stations operated by the Department and to the Agricultural College at Muresk, land regeneration at the Ord River and advances made to Northern Developments (Ord River) Pty. Ltd. to assist the Company in developing a pilot farm in the vicinity of the diversion dam.

The aggregate expenditure described as "Miscellaneous" amounted to £8,515,518, of which £2,460,398, or more than one-quarter, was used to provide additional capital for the Rural and Industries Bank of Western Australia and to finance advances by the Bank to primary and secondary industries. A further sum of £1,044,174 was spent on account of the State Shipping Service in progress payments on new ships under construction, instalment payments on ships already in operation and structural alterations to some of its fleet. The remaining expenditure relates to such items as industrial development and assistance to industry, including loan advances made to Cockburn Cement Pty. Ltd. under the provisions of the Industry (Advances) Act, 1947–1961, the purchase and resumption of land for industrial purposes, and development of a light industrial area at Kwinana, advances to the University of Western Australia for the construction of buildings and purchase of equipment, pine planting, and loans and grants to a number of welfare organizations.

Public Debt—Reference is made on page 197 to the National Debt Commission and its functions in relation to the public debts of the States.

Western Australia's gross public debt at the 30th June, 1962 was £277,564,978, compared with £205,145,043 at the 30th June, 1957, representing an increase of £72,419,935 during the five years. Total raisings in the financial years 1957–58 to 1961–62 amounted to £85,315,736 and the value of securities repurchased and redeemed in Australia, London and New York by the National Debt Commission was

£12,895,801. The State's balance on Sinking Fund available to the National Debt Commission at the 30th June, 1962 was £110,966 and Western Australia's net public debt at that date was therefore £277,454,012.

The following table presents a summary of public debt transactions in each year of the period between the 30th June, 1957 and the 30th June, 1962 and provides a reconcilation between public debt and the aggregate net loan expenditure to each of those dates as shown in the preceding table.

NET LOAN EXPENDITURE AND PUBLIC DEBT

Particulars	As at 30th June :—					
	1957	1958	1959	1960	1961	1962
Debits—	£	£	£	£	£	£
Aggregate Net Loan Expenditure	(a)242,339,869	257,784,087	273,844,897	291,113,834	308,648,239	(a) 327,652,138
Inscribed Stock issued under Agricultural Bank Act	1,566,000	1,566,000	1,566,000	1,566,000	1,566,000	1,566,000
Unexpended Balance of General Loan Fund				4,017	551	580
Total Debits	243,905,869	259,350,087	275,410,897	292,683,851	310,214,790	329,218,718
Credits—						
Aggregate Redemptions	38,757,939	40,921,495	43,292,155	45,896,559	48,679,771	51,653,740
Over-expenditure from General Loan Fund	2,887	147	163			
Total Credits	38,760,826	40,921,642	43,292,318	45,896,559	48,679,771	51,653,740
Balance—Gross Public Debt	205,145,043	218,428,445	232,118,579	246,787,292	261,535,019	277,564,978
Amount of Public Debt Maturing in :—						
Australia	174,411,294	187,372,628	199,575,215	214,047,752	227,969,456	243,424,758
London	29,585,490	29,530,491	30,630,491	30,490,491	30,431,964	30,411,964
New York	1,148,259	1,525,326	1,912,873	2,249,049	2,607,829	2,932,909
Canada					333,094	333,094
Switzerland					192,676	192,676
Netherlands						269,577
Total—Gross Public Debt	205,145,043	218,428,445	232,118,579	246,787,292	261,535,019	277,564,978
Sinking Fund available for further Debt Redemption	55,918	73,659	86,437	85,529	46,901	110,966
Net Public Debt	205,089,125	218,354,786	232,032,142	246,701,763	261,488,118	277,454,012

(a) From preceding table.

Trust Funds

The transactions of accounts which constitute the State Government's Trust Funds are recorded in a *Statement of the Receipts and Disbursements of Western Australia* which is published quarterly in the *Government Gazette*.

Trust Funds are divided into three groups, Governmental, Private, and those which deal with moneys advanced by the Commonwealth Government for specific purposes. Governmental Trust Funds relate generally to the financial activities of semi-governmental authorities although they include some accounts, such as the Forests Improvement and Reforestation Fund and accounts concerning certain aspects of agriculture, which are connected with the work of Government Departments. Among the government instrumentalities whose operations are financed entirely or largely from Trust Funds are the State Housing Commission, the Rural and Industries Bank, the Main Roads Department and the State Government Insurance Office. Finance for public hospitals is also provided from Trust Funds. Private Trust Fund balances comprise moneys available for disbursement to or on behalf of private persons. Examples are the Coal Mine Workers' Pensions Fund and the fund for grants to institutions from the Lotteries Commission. Funds relating to advances from the Commonwealth include those made under the Commonwealth Aid Roads Acts and the Commonwealth-State Housing Agreement as well as finance for war service land settlement, the encouragement of meat production and other assistance to primary industry.

The detailed list of Trust Fund transactions appearing in the quarterly statement of receipts and disbursements is an extensive one, and in the following summary only selected items are shown separately. They have been chosen as being among those under which the largest totals of receipts and expenditure, though not necessarily the largest balances, are recorded, and as giving some indication of the diverse nature of the government Trust Funds.

SUMMARY OF TRUST FUNDS—RECEIPTS AND EXPENDITURE

Title of Account	Financial Year 1960-61 Receipts	1960-61 Expenditure	1961-62 Receipts	1961-62 Expenditure	1961-62 Balance of Fund at 30th June
	£	£	£	£	£
Governmental Trust Funds—					
Agriculture Protection Board	193,328	180,527	188,153	199,546	39,284
Argentine Ant Control Committee	23,744	28,872	20,946	36,833	48
Crown Law Advance	1,391,614	1,395,226	1,280,244	1,246,321	44,240
Forests Improvement and Reforestation	1,187,226	1,302,289	1,502,564	1,408,705	144,006
Hospital Buildings and Equipment	340,237	366,580	584,911	540,912	66,572
Hospital Fund Contributions	6,669,725	6,669,725	7,662,037	7,662,037	
Housing—					
Kwinana Housing	115,459	113,782	117,110	112,370	39,705
State Housing Commission	6,021,646	5,980,960	6,887,971	6,504,946	930,636
Insurance—					
Government Fire and Marine Insurance	342,615	385,896	344,436	432,218	30,026
Government Workers' Compensation	580,228	546,477	587,281	594,021	126,799
State Insurance	1,880,675	1,859,233	2,282,312	2,297,989	25,691
Library Board of Western Australia	167,625	165,582	181,955	183,603	395
Metropolitan Region Improvement	249,826	205,136	454,456	277,729	403,115
Native Welfare Administration	767,663	767,663	1,173,218	1,173,218	
Plant Hire	993,826	820,324	1,022,578	1,054,332	1,092,298
Public Debt Sinking Fund	2,871,163	2,909,791	3,146,853	3,082,788	110,966
Railways Rolling Stock Replacement	502,743	508,698	514,037	918,576	263,454
Roads—					
Central Road Fund	1,706,280	997,298	2,160,430	1,460,230	2,112,377
Main Roads	1,413,944	1,443,892	2,551,144	2,183,984	669,564
Main Roads Contribution	237,193	82,886	1,071,551	1,142,584	83,274
Metropolitan Traffic	1,473,290	1,473,290	1,588,399	1,588,399	
Narrows Bridge Construction	152,428	181,795	4,933	13,538	1,839
Western Switch Road	120,000		520,004	494,669	145,335
Rural and Industries Bank	1,427,168	1,265,925	1,591,478	1,751,320	5,094
State Electricity Commission Loans—Sinking Funds	218,473	192,331	204,860	176,935	285,440
Transport Co-ordination	427,666	432,037	449,635	416,377	73,931
Vermin Act	164,509	148,814	159,861	172,677	57,699
Other	2,522,361	2,234,214	2,565,911	2,370,686	4,133,743
Total	34,162,655	32,659,243	40,819,268	39,497,543	10,885,531
Private Trust Funds—					
Charitable Institutions	138,638	128,405	132,574	125,418	93,990
Clerk of Courts	1,101,309	1,100,512	1,271,945	1,263,308	47,843
Coal Mine Workers' Investment Reserve	33,544	17,279	56,259	53,580	805,959
Coal Mine Workers' Pensions	188,356	178,026	217,756	232,118	2,251
Country High School Hostels Authority	20,390	380	252,076	129,439	142,647
Local Authorities Sinking Funds	10,267		13,737	105	94,781
Lotteries Commission Grants to Institutions	6,780	29,305	22,297	227,405	2
Public Trustee Common Fund	1,422,761	1,384,015	1,403,628	1,466,657	Dr. 942
Superannuation Fund	2,367,198	2,365,691	2,561,757	2,568,632	20,920
Superannuation Investment Reserve	931,856	115,772	919,694	10,487	7,788,275
Other	1,118,237	1,118,659	1,053,997	999,030	820,407
Total	7,339,336	6,438,044	7,905,720	7,076,179	9,816,133
Funds financed from Commonwealth Advances—					
Housing—					
Commonwealth-State Housing Agreement	6,012,908	5,459,214	6,422,461	6,962,545	810,275
Home Builders	1,081,979	1,189,900	1,357,139	1,085,030	309,147
War Service Homes	3,627,131	3,636,521	3,639,189	3,631,871	8,894
Private Hospitals Benefit	277,000	249,238	272,010	268,522	31,275
Public Hospitals Benefit	480,000	501,269	508,000	521,027	38,665
Roads—					
Beef Cattle Roads			627,152	627,260	Dr. 108
Commonwealth Aid Roads Acts	10,210,599	10,359,002	10,803,804	10,824,322	25,330
Stimulation of Employment			660,000	660,000	
War Service Land Settlement	2,982,236	3,067,913	2,394,469	2,596,558	125,425
Other	541,145	550,247	760,914	748,699	326,551
Total	25,212,998	25,013,304	27,445,138	27,925,834	1,675,454
GRAND TOTAL	66,714,989	64,110,591	76,170,126	74,499,556	22,377,118

LOCAL GOVERNMENT FINANCE

Prior to the operation of the Local Government Act of 1960, effective from the 1st July, 1961, the financial and other powers of local government authorities in Western Australia were derived mainly from the Municipal Corporations Act and the Road Districts Act. This legislation was repealed by the

Local Government Act, the main provisions of which are outlined in Chapter III—*Constitution and Government.* Among other statutes affecting local government finance are the Traffic Act, the Health Act, the Water Boards Act, the Vermin Act and the Fire Brigades Act.

The figures and the letterpress in this section relate to the operations of Municipal Councils (now City Councils or Town Councils) and Road Boards (now Shire Councils). The activities of the Fremantle Municipal Transport Board (operative to the 31st August, 1960) and the Eastern Goldfields Transport Board (see Chapter IX, Part 2) are not included.

For 1960–61 and earlier years, the financial year for Road Boards ended on the 30th June and for Municipal Councils on the 31st October. The Local Government Act prescribes a financial year ending on the 30th June for all local government authorities. In the tables in this section which relate to general revenue and expenditure and loan transactions the figures shown for 1961–62 refer to the eight months from the 1st November, 1961 to the 30th June, 1962 in the case of City Councils and Town Councils, and to the year ended 30th June, 1962 in the case of Shire Councils.

General Revenue

Taxation—As may be seen from the following table, revenue from taxation other than motor vehicle registration fees accounts for about two-fifths of the total receipts of local authorities and is derived almost entirely from rates. The most important of these is the general rate, provided for in the local government legislation. With the commencement of the Local Government Act on the 1st July, 1961 loan rates and those formerly levied separately for specific purposes, such as the health rate and the vermin rate, were merged in a general rate imposed as a single levy. Other forms of taxation are permits required under building by-laws, dog licences, and licences and permits issued under the Health Act.

Public Works and Services—Revenue from Public Works and Services amounts to about one-fifth of the total. Income from property and plant is the largest item and includes rents and hire charges for buildings, plant and recreational facilities as well as sales of land, vehicles and plant. Next in importance are the receipts from sanitary services and from construction of private roads which include driveways to premises.

Government Reimbursements and Grants—Grants for specific road works and recoups of road construction costs constitute the main item in this category. The local governing bodies are reimbursed by the State Government for expenditure incurred on its behalf in road construction and maintenance, which is undertaken principally for the Main Roads Department but also for other State authorities as, for example, the State Housing Commission. Amounts paid as bonuses for the destruction of wild dogs, foxes and other vermin are recouped by the Department of Agriculture. From 1960–61, grants made by the Tourist Development Authority established under the Tourist Act of 1959 are included.

Business Undertakings—The only type of business undertaking from which any substantial revenue is derived is the supply of electricity. The expansion of the area served by the State Electricity Commission and its progressive acquisition of the generating plants of local authorities in the south-west part of the State may be expected to cause some decline in the importance of this field of local government activity. Some details of local government operations in the generation of electricity during 1961–62 appear in the table " Summary of Factories according to Industry " in Chapter VIII, Part 2.

The amounts described as " Profits from Other Business Undertakings " comprise allocations of profits to certain local government authorities made by the Fremantle Municipal Transport Board up to the 31st August, 1960 after which the Board's service was taken over by the Metropolitan (Perth) Passenger Transport Trust. As the figures include only moneys appropriated to general revenue they do not necessarily represent the working profits for the year stated.

Motor Vehicle Registration Fees—Revenue from motor vehicle registration fees is an important item in local government finance. In Western Australia, there is no single authority responsible for the licensing of motor vehicles. The Traffic Branch of the Police Department licenses vehicles in the Metropolitan Traffic Area, which comprises the whole of the Metropolitan Statistical Division and some adjacent local government districts or parts of districts (see letterpress *Vehicle Registration, Licences and Traffic Control* in Chapter IX, Part 2). Outside this Area each local government authority licenses vehicles in its own district and retains the fees collected. Metropolitan local authorities receive proportionate allocations of the revenue from vehicle licences issued by the Police Department in the Metropolitan Traffic Area. These disbursements are made from the Metropolitan Traffic Trust Fund, to which the licence fees for vehicles registered in the Metropolitan Traffic Area are paid in the first instance.

SUMMARY OF LOCAL GOVERNMENT REVENUE

(Exclusive of Loan Receipts)

Source of Revenue	Financial Year				
	1957–58	1958–59	1959–60	1960–61	1961–62
Taxation—	£	£	£	£	£
Rates—					
General	2,084,668	2,186,106	2,271,738	2,390,539	
Loan	836,571	974,050	1,153,652	1,348,389	
Health and Sanitary	334,197	369,880	346,954	419,787	4,117,269
Vermin	54,535	53,679	52,113	61,324	(*a*)
Other	136,909	157,209	159,900	147,344	
Total	3,446,880	3,740,924	3,984,357	4,367,383	4,117,269
Licences and Fees (*b*)	58,905	58,835	73,660	75,693	67,230
Total—Taxation (*b*)	3,505,785	3,799,759	4,058,017	4,443,076	4,184,499
Public Works and Services—					
Sanitary Services, including Garbage Collection	466,393	470,517	494,963	511,579	450,352
Water Supply	12,388	17,317	12,970	13,702	15,893
Income from Property and Plant—					
Parks, Gardens and Recreational Facilities	94,742	108,713	128,381	143,270	168,492
Halls and other Buildings	149,129	162,908	170,380	164,656	149,588
Vehicles and Plant	166,377	176,090	166,913	222,463	243,839
Other Property (*c*)					450,540
Other Properties and Services (*c*)	436,872	668,054	720,579	688,402	
Sundry Works and Services (*c*)	79,939	99,514	98,871	90,027	189,205
Contributions for Road Construction, etc.	255,862	307,733	358,956	359,671	451,472
Total—Public Works and Services	1,661,702	2,010,846	2,152,013	2,193,770	2,119,381
Government Reimbursements and Grants—					
Roads	1,267,053	1,113,168	1,348,641	1,541,441	1,614,812
Vermin Destruction Bonuses	18,747	8,938	14,194	6,928	9,517
Recreational Facilities (*d*)	42,926	25,482	42,151	46,613	(*e*) 331,120
Electricity Supply				36,383	46,528
Infant Health				6,869	9,532
Other				5,716	42,182
Total—Reimbursements and Grants	1,328,726	1,147,588	1,404,986	1,643,950	2,053,691
Motor Vehicle Registration Fees—					
Direct Collections (*f*)	971,216	1,036,556	1,179,450	1,250,692	1,235,422
Allocations from Metropolitan Traffic Trust Fund	451,108	484,805	554,032	622,007	586,763
Total—Vehicle Registration Fees	1,422,324	1,521,361	1,733,482	1,872,699	1,822,185
Other Revenue—					
Electricity Undertakings	619,984	678,683	724,924	766,675	722,021
Profits from other Business Undertakings	11,197	21,184	21,000		
Fines and Penalties	22,648	54,226	56,297	55,592	48,805
Other	210,488	194,698	213,526	334,878	353,802
Total—Other Revenue	864,317	948,791	1,015,747	1,157,145	1,124,628
GRAND TOTAL (*g*)	8,782,854	9,428,345	10,364,245	11,310,640	11,304,384

(*a*) The Local Government Act of 1960 prescribes a single General Rate in place of the several rates formerly levied separately for specific purposes. (*b*) Excludes reveuue from vehicle licenees (see " Motor Vehicle Registration Fees " below), as this item is included in the table *Net Collections of State Taxation* on page 202 for purposes of comparison with other States. Excludes also sanitary and garbage fees (see " Public Works and Services " below). (*c*) From 1961–62, part of the revenue formerly attributed to the item " Other Properties and Services " has been allocated to a new item " Other Property ", and the remainder to " Sundry Works and Services ". (*d*) From 1960–61 includes grants from Tourist Development Authority. (*e*) Includes grants to Perth City Council of £150,000 from the State Government and £100,000 from the Commonwealth Government as contributions towards the cost of an aquatic centre built in connexion with the VII British Empire and Commonwealth Games. (*f*) Fees collected and retained by local government authorities outside the Metropolitan Traffic Area. (*g*) Figures exclude amounts appropriated to general revenue as profits from electricity undertakings.

General Expenditure

General Administration—The amounts shown under this item in the following table comprise the administration costs of local government authorities. Expenditure on the administration of such services as water supply, vermin destruction and health and sanitary services is not debited to this item but is included in the figures shown under the heading of Public Works and Services.

Debt Services—Expenditure on debt services includes debt redemption charges, interest payable under hire purchase agreements and interest charges on loans and overdrafts.

Public Works and Services—The principal expenditure under the heading of Public Works and Services relates to roads, paths and bridges and includes construction and maintenance costs as well as moneys spent on other road work such as the cleaning and watering of thoroughfares, the construction of private roadways, the provision of street nameplates and seats, street tree planting and street lighting.

Other costs are those connected with health, sanitation and garbage services, capital and maintenance expenditure on property and on vehicles and other plant. Some of the items included under the general heading of Public Works and Services are financed only partly from revenue, the remaining expenditure being from loan funds (see table on page 212).

Grants and Donations—Many of the local authorities make annual contributions as required by the Fire Brigades Act towards the maintenance of fire brigades, while grants are also made in some cases to hospitals and ambulances, to infant health clinics where they are not under the direct control of the local authority concerned, to other local organizations and to the Western Australian State Symphony Orchestra.

Electricity Undertakings—The figures shown for expenditure of electricity undertakings exclude amounts appropriated from profits to the general account of the local authority concerned.

SUMMARY OF LOCAL GOVERNMENT EXPENDITURE
(*Exclusive of Loan Expenditure*)

Nature of Expenditure	Financial Year				
	1957–58	1958–59	1959–60	1960–61	1961–62
	£	£	£	£	£
General Administration	945,803	1,005,828	1,106,214	1,225,831	977,975
Debt Services (*a*)—					
Interest and other Charges	349,354	425,079	507,505	599,332	631,224
Redemptions	656,514	734,955	934,560	1,046,038	1,019,071
Total—Debt Services (*a*)	1,005,868	1,160,034	1,442,065	1,645,370	1,650,295
Public Works and Services—					
Roads, Paths and Bridges—					
Construction and Maintenance	2,111,510	2,162,187	2,285,675	2,548,711	3,028,303
Other Road Work	249,941	271,530	276,197	305,441	286,003
Street Lighting	101,411	116,673	139,464	159,954	143,790
Property and Plant—					
Parks, Gardens and Recreational Facilities	584,277	647,866	721,037	888,478	1,128,066
Halls and other Buildings	376,822	506,741	489,503	574,966	529,845
Vehicles and Plant	824,350	869,168	936,916	1,055,258	626,025
Other Property (*b*)					285,581
Other Public Works and Services (*b*)—					
Sanitary and Garbage Services	540,067	535,168	555,874	584,900	494,708
Other Health Services	316,625	328,182	353,716	365,034	219,519
Water Supply	44,282	46,446	39,018	50,512	52,845
Sundry Works and Services	581,755	610,108	803,235	823,449	540,389
Total—Public Works and Services	5,731,040	6,094,069	6,600,635	7,366,703	7,335,074
Grants and Donations—					
Fire Brigades	97,879	106,420	114,257	125,241	116,280
Hospitals and Ambulances	6,142	13,139	8,369	7,316	7,202
Other	19,822	19,245	18,585	31,739	43,714
Total—Grants and Donations	123,843	138,804	141,211	164,296	167,196
Electricity Undertakings (including debt services) (*c*)	601,047	640,569	698,319	735,049	661,158
Other Expenditure	160,026	159,396	290,485	263,432	300,720
GRAND TOTAL (*c*)	8,567,627	9,198,700	10,278,929	11,400,681	11,092,418

(*a*) Excludes debt services of Electricity Undertakings. (*b*) From 1961–62, a revised classification of expenditure on Public Works and Services has been adopted. (*c*) Figures exclude amounts appropriated to general revenue as profits from electricity undertakings.

Loan Transactions

Under the provisions of the local government legislation, local government authorities are constituted as corporate bodies and are authorized to raise loans for works and undertakings and for the liquidation of existing loan debts. The conditions imposed by the Local Government Act, 1960–1962 in relation to loan raisings, the levying of loan rates, the expenditure of loan moneys and the repayment of loans are summarized in the section *The Local Government System* in Chapter III.

Loans are raised mainly from banks, insurance companies and superannuation funds. The State Government exercises a measure of supervision over the loan transactions of local government authorities and, where a loan is repayable in full at maturity, maintains the necessary sinking fund at the Treasury.

LOCAL GOVERNMENT LOAN RECEIPTS AND EXPENDITURE

Item	Financial Year				
	1957–58	1958–59	1959–60	1960–61	1961–62
RECEIPTS					
	£	£	£	£	£
Ordinary Services	1,687,895	2,019,250	2,545,425	2,783,000	2,483,359
Health Services	140,000	61,400	46,401	127,100	203,405
Water Supply	31,000	39,000	27,000	38,000	15,100
Electricity Undertakings	83,500	66,500	68,703	142,500	196,500
Total	1,942,395	2,186,150	2,687,529	3,090,600	2,898,364
EXPENDITURE					
	£	£	£	£	£
Roads, Paths and Bridges	699,792	823,233	981,976	844,886	843,289
Property and Plant	465,953	489,154	487,888	993,598	1,200,340
Parks, Gardens and Recreational Facilities	186,790	473,821	247,997	328,995	590,989
Water Supply	37,985	32,276	19,373	34,783	10,713
Electricity Undertakings	88,856	92,715	59,546	135,651	155,641
Other Works and Services	224,481	286,376	119,853	70,809	100,715
Redemptions	53,920	67,708	5,035	7,330	7,000
Other Loan Charges, Transfers, etc.	19,266	3,909	2,522	136,495	301,958
Total	1,777,043	2,269,192	1,924,190	2,552,547	3,210,645

The following table shows the aggregate local government loan debt outstanding at the end of each financial year during the period from 1957–58 to 1961–62.

LOCAL GOVERNMENT LOAN DEBT

Nature of Debt	At End of Financial Year				
	1957–58	1958–59	1959–60	1960–61	1961–62
	£	£	£	£	£
Loan Debt Outstanding	8,827,544	10,174,433	11,885,914	13,888,817	15,737,025
Sinking Fund Balances	61,979	60,515	71,025	82,219	93,573
Net Loan Debt	8,765,565	10,113,918	11,814,889	13,806,598	15,643,452
Net Loan Debt on Account of—					
Ordinary Services	7,893,763	9,147,482	10,804,826	12,587,920	14,112,426
Health Services	234,611	269,461	281,367	369,148	533,667
Water Supply	138,451	167,127	170,408	194,401	194,317
Electricity Undertakings	498,740	529,848	558,288	655,129	803,042
Total—Net Loan Debt	8,765,565	10,113,918	11,814,889	13,806,598	15,643,452



CHAPTER VI — *continued*

PART 2 – PRIVATE FINANCE

CURRENCY

The power to legislate with respect to currency, coinage and legal tender and the issue of paper money is vested by the Constitution in the Commonwealth Parliament. This power was originally exercised by the Commonwealth Government under the Coinage Act of 1909 and the Australian Notes Act of 1910. The Statutes now in force are the Coinage Act 1909–1947 and the Reserve Bank Act 1959.

The Australian monetary system is based on that used in the United Kingdom and therefore has as its unit the pound (£) divided into 20 shillings (s.) each of 12 pence (d.). When the Australian currency was first introduced, the Australian pound was identical in value with the pound sterling. Following a gradual depreciation of the Australian pound in terms of sterling during 1930 and 1931, it was stabilized from the 3rd December, 1931 at the rate of £125 Australian = £100 sterling, which has continued to be the prevailing rate. Notes are issued by the Reserve Bank of Australia which is authorized to make issues in the denominations of 5s., 10s., £1, £5, £10 or any multiple of £10. Only notes in the denominations of 10s., £1, £5 and £10 are now in general circulation, no 5s. notes having been issued and public issue of those of denominations higher than £10 having ceased in 1945. The coinage consists of silver and bronze coins, which are minted by branches of the Royal Mint in Melbourne and Perth. Silver coins are issued in denominations of two shillings, one shilling, sixpence and threepence. The bronze coins are the penny and the halfpenny.

Australian notes are legal tender in Australia to any amount, silver coins for amounts not exceeding forty shillings and bronze coins for amounts up to and including one shilling.

It was announced on the 7th April, 1963 that the Government intended to proceed with plans for the introduction of a decimal currency system. The first of the enabling Acts, the Currency Act passed by the Commonwealth Parliament in October, 1963, will replace the Coinage Act 1909–1947 and provides for the adoption of a unit of currency, to be known as the " dollar," equivalent in value to the present ten shillings. The dollar is to be divided into 100 minor units, or " cents." Coins are to be minted in the denominations of 50 cents (silver) ; 20, 10 and 5 cents (cupro-nickel) ; and 2 cents and 1 cent (bronze). It is planned to put the new currency into circulation in February, 1966, and during a transitional period of perhaps 18 months after that date the new and the old currency systems will operate simultaneously.

BANKING

The banking system in Western Australia comprises the Commonwealth banking institutions, The Rural and Industries Bank of Western Australia and the private trading banks.

Commonwealth Banking Institutions

Prior to the operation of the Reserve Bank Act and the Commonwealth Banks Act, passed by the Commonwealth Parliament in 1959, the Commonwealth banking institutions were the Commonwealth Bank, the Commonwealth Trading Bank and the Commonwealth Savings Bank. The Commonwealth Bank, in addition to performing the functions of a central bank, controlled the Australian note issue through a Note Issue Department and also provided special banking facilities through the Rural Credits Department, the Mortgage Bank Department and the Industrial Finance Department. The policy of the Banks was determined by a Commonwealth Bank Board.

The Reserve Bank Act 1959 repealed the Commonwealth Bank Acts, the first of which was passed in 1911, and established the Reserve Bank of Australia under the control of a Reserve Bank Board. The Reserve Bank was constituted as the central bank and took over the Note Issue Department and the Rural Credits Department of the former Commonwealth Bank. The function of the Rural Credits Department is to make available to statutory authorities or co-operative associations of primary producers advances to assist the marketing or processing of primary products.

The Commonwealth Banks Act 1959 constitutes the Commonwealth Banking Corporation, which came into being on the 14th January, 1960 as the authority responsible for the operations of the Trading Bank, the Savings Bank and a new Development Bank. The Development Bank was formed basically from the Mortgage Bank Department and the Industrial Finance Department of the Commonwealth Bank, to provide finance and advice to persons to assist them in primary production or in the establishment or development of industrial undertakings, particularly small enterprises.

The Rural and Industries Bank of Western Australia

The Rural and Industries Bank of Western Australia was established by the State Government under the Rural and Industries Bank Act of 1944 to replace the former Agricultural Bank of Western Australia. The Bank consists of a Rural Department and a Government Agency Department, and management is vested in five Commissioners. The Rural Department provides general banking services, and since 1956 has also conducted savings bank business through a Savings Bank Division.

Trading Banks

The nine trading banks conducting business in Western Australia comprise the Commonwealth Trading Bank of Australia, The Rural and Industries Bank of Western Australia (Rural Department) and seven private trading banks.

The private banks, each of which has its head office either in London or in another State, are the Australia and New Zealand Bank Limited, The Bank of Adelaide, the Bank of New South Wales, The Commercial Bank of Australia Limited, The Commercial Banking Company of Sydney Limited, The English, Scottish and Australian Bank Limited and The National Bank of Australasia Limited. The operations of trading banks are governed by the Banking Act 1959 (Commonwealth) which places them under a degree of control by the central bank, the Reserve Bank of Australia.

The following table shows the averages of total amounts on deposit with the trading banks and of their outstanding advances during each of the years 1957–58 to 1961–62. The figures relate to Western Australian business only and represent the annual average of amounts as at the close of business each Wednesday. The information is prepared from returns furnished under the requirements of the Banking Act 1959 hy all trading banks except the Rural and Industries Bank of Western Australia, which supplies information by special arrangement.

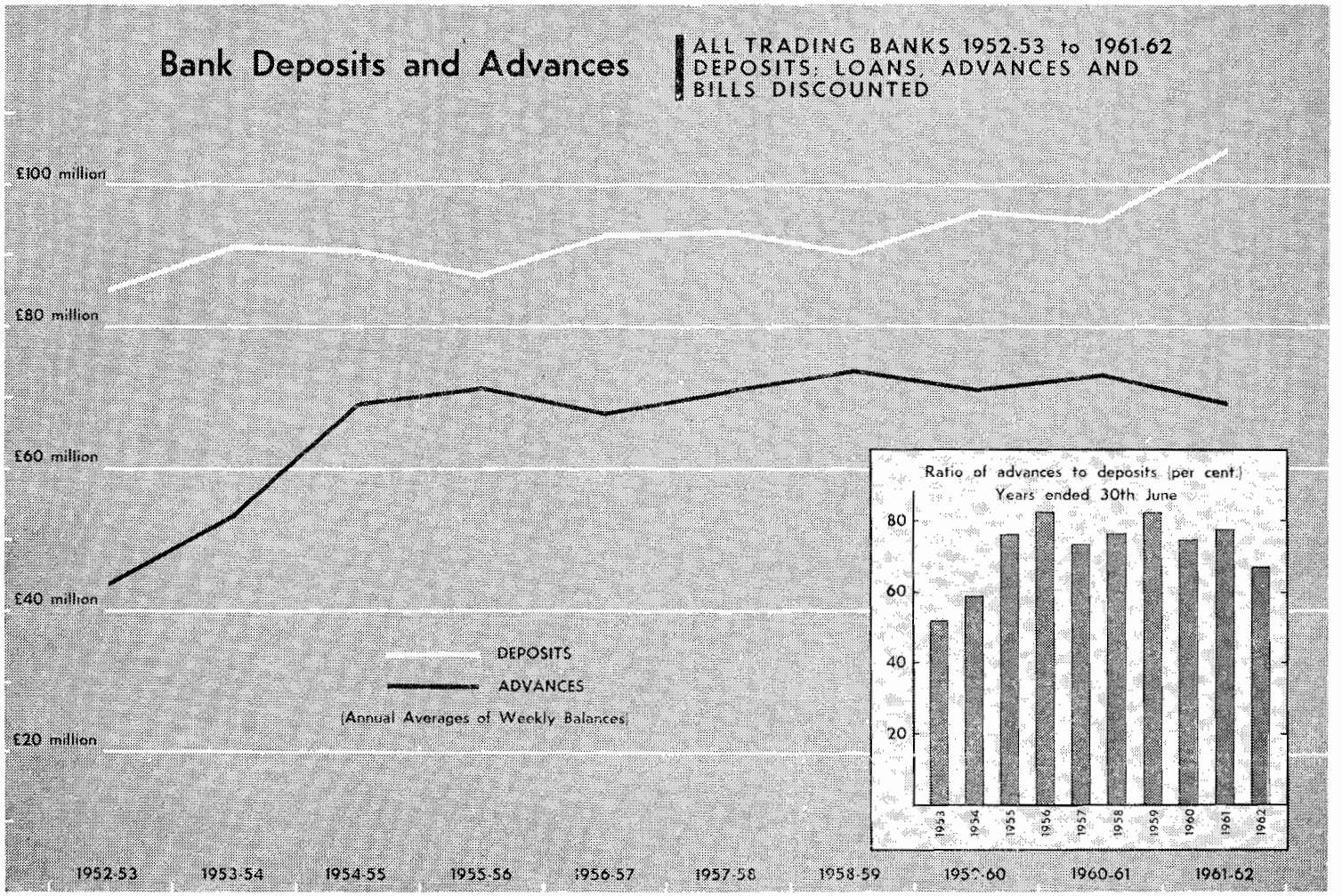
TRADING BANKS—AVERAGES OF AMOUNTS ON DEPOSIT AND OF ADVANCES
(£'000)

Particulars	Financial Year				
	1957–58	1958–59	1959–60	1960–61	1961–62
Amounts on Deposit—					
Not bearing Interest—					
Australian Governments	786	441	504	547	576
Other	69,048	64,895	69,881	67,604	69,932
Bearing Interest—					
Australian Governments	69	17	23	27	15
Other—Current	3,253	3,627	4,190	4,005	3,975
Fixed	20,083	21,170	21,440	22,864	30,140
Total	93,239	90,150	96,038	95,047	104,638
Loans, Advances and Bills Outstanding (*a*)	70,599	73,553	71,032	73,123	69,602
Ratio of Advances to Deposits (per cent.)	75·7	81·6	74·0	76·9	66·5

(*a*) Excludes loans to authorized dealers in the short-term money market.

Of outstanding advances amounting in total to £75·4 million in July, 1962, business advances represented £57·8 million, personal advances £15·4 million, advances to non-profit organizations £1·62 million, and to public authorities other than the Commonwealth and State Governments £0·55 million. Business advances were mainly for rural industry (£25·5 million), for retail and wholesale trade (£13·4 million) and for manufacturing (£8·09 million). Of the personal advances, loans for the building or purchasing of homes accounted for £8·07 million.

At the 31st December, 1962 the Commonwealth Trading Bank's discount rate on bills was 6 per cent. Under the Banking Act 1959 the Reserve Bank of Australia has the power to fix the rates of interest which may be charged by trading banks on overdrafts. At the 31st December, 1962, by agreement between the Reserve Bank and the trading banks, the maximum rate applying to any overdraft was 7 per cent. (The requirement, operative from the 17th November, 1960, that the average rate on all overdrafts should not exceed 6 per cent. was discontinued from the 13th April, 1962.) At the 31st December, 1962 the rate of interest on fixed deposits was 3¾ per cent. on deposits for 3 months but


Bank Deposits and Advances
ALL TRADING BANKS 1952-53 to 1961-62
DEPOSITS, LOANS, ADVANCES AND BILLS DISCOUNTED
£100 million
£80 million
£60 million
£40 million
£20 million
DEPOSITS
ADVANCES
(Annual Averages of Weekly Balances)
Ratio of advances to deposits (per cent.)
Years ended 30th June
80
60
40
20
1953
1954
1955
1956
1957
1958
1959
1960
1961
1962
1952-53
1953-54
1954-55
1955-56
1956-57
1957-58
1958-59
1959-60
1960-61
1961-62

less than 12 months and 4 per cent. on those for 12 months to 15 months. (From the 10th September, 1962 the maximum period for which trading banks were permitted to accept fixed deposits was extended from 12 months to 15 months).

In the following table, which relates to Western Australian business only, the average amount on deposit with each trading bank and the average of its outstanding advances during the month of June, 1962 are shown, together with the number of branches and agencies of each bank at the 30th June, 1962.

TRADING BANKS—BRANCHES, AGENCIES, DEPOSITS AND ADVANCES : JUNE, 1962

Bank	Number of Branches (*a*)	Number of Agencies (*a*)	Amounts on Deposit (*b*)			Loans, Advances and Bills Outstanding (*b*) (*c*)
			Not Bearing Interest	Bearing Interest	Total	
			£'000	£'000	£'000	£'000
Commonwealth Trading Bank of Australia	53	22	10,370	7,565	17,935	10,383
The Rural and Industries Bank of Western Australia (Rural Department)	40	24	7,730	2,319	10,049	12,462
Private Trading Banks—						
Australia and New Zealand Bank Limited	33	29	8,647	3,297	11,944	8,564
The Bank of Adelaide	2	2	732	103	835	457
Bank of New South Wales	95	41	20,165	9,248	29,413	18,983
The Commercial Bank of Australia Limited	29	28	4,868	2,475	7,343	5,007
The Commercial Banking Company of Sydney Limited	2		397	188	585	534
The English, Scottish and Australian Bank Limited	18	1	3,962	1,186	5,148	3,884
The National Bank of Australasia Limited	67	29	11,228	9,259	20,487	12,649
Total—Private Trading Banks	246	130	49,999	25,756	75,755	50,078
TOTAL—ALL TRADING BANKS	339	176	68,099	35,640	103,739	72,923

(*a*) At 30th June. (*b*) Average as at the close of business on Wednesdays in June. (*c*) Excludes loans to authorized dealers in the short-term money market.

The following table shows the weekly averages of bank clearings through the Perth clearing house for each of the years from 1958 to 1962 and for each quarter in those years.

BANK CLEARINGS—WEEKLY AVERAGES FOR PERTH
(£'000)

Particulars	1958	1959	1960	1961	1962
Average for Quarter ended—					
March	16,210	18,613	21,947	23,781	26,256
June	15,048	15,321	21,156	23,124	25,025
September	13,944	16,506	21,987	22,554	25,147
December	15,504	18,701	24,418	25,046	26,905
Average for Year	15,163	17,250	22,462	23,639	25,906

Prior to the 1st October, 1962 charges levied by trading banks included exchange on interstate transfers between Perth and other capital cities in Australia, and intrastate exchange payable on the basis of zones into which Western Australia was divided for the purpose. No charge was made for transfers within a city or town. Details of exchange rates payable before the 1st October, 1962 are given on page 200 of the *Official Year Book of Western Australia* (*No.* 3), 1962.

From the 1st October, 1962 inland exchange was abolished and a new system of bank service charges on current accounts introduced. The charges, comprising three separate elements, are calculated quarterly and debited as one composite item.

In addition to a basic maintenance fee of 5s. per quarter, there is a ledger activity fee related to the number of transactions each quarter, and a collection fee on cheques deposited in excess of 20 per quarter. Rebates are allowable on ledger activity fees where credit balances are maintained at the level of £300 or more throughout the quarterly period.

Savings Banks

Savings bank facilities in Western Australia are provided by the Commonwealth Savings Bank of Australia, which commenced business in Western Australia in 1913, and by the Australia and New Zealand Savings Bank Limited, the Bank of New South Wales Savings Bank Limited, the C.B.C. Savings Bank Limited and The Rural and Industries Bank of Western Australia (Savings Bank Division), all of which were established in 1956 ; the E.S. and A. Savings Bank Limited, established in 1961 ; The Bank of Adelaide Savings Bank Limited and The National Bank Savings Bank Limited, each of which commenced business on the 31st May, 1962 ; and The Commercial Savings Bank of Australia Limited which opened on the 2nd July, 1962.

Individual depositors may not operate on their savings bank accounts by cheque, but cheque accounts are generally available to non-profit organizations such as friendly, co-operative and charitable societies. Interest is paid on deposits with savings banks and no charge is made for the keeping of accounts. A school savings bank service is provided and the amount standing to the credit of 83,693 accounts at schools was £562,166 at the end of June, 1962. The operations of the school savings bank service are included in the figures shown in the following table except those which relate to the number of accounts open at the end of each year.

SAVINGS BANK TRANSACTIONS

Particulars	Financial Year				
	1957–58	1958–59	1959–60	1960–61	1961–62
Deposits (*a*) £'000	71,189	78,259	91,678	96,167	111,831
Withdrawals (*a*) £'000	69,499	74,487	86,598	96,333	104,693
Excess of—					
Deposits over Withdrawals £'000	1,690	3,773	5,079		7,137
Withdrawals over Deposits £'000				166	
Interest £'000	1,565	1,778	2,044	2,255	2,679
Accounts Open at end of Year No.	497,690	527,079	550,966	577,619	625,070
Amount Due to Depositors at end of Year—					
Total £'000	65,948	71,499	78,622	80,712	90,527
Average per Account £	132·5	135·7	142·7	139·7	144·8
Average per head of Population £	94·3	100·4	108·9	109·6	120·0

(*a*) Excluding transfers from and to other States.

The rates of interest paid by savings banks at the 30th June in each of the years from 1958 to 1962 are shown in the following table.

SAVINGS BANKS—INTEREST RATES ON DEPOSITS (*a*)
(per cent. per annum)

Type of Account	Interest Rates at 30th June :				
	1958	1959	1960	1961	1962
Ordinary Accounts—					
£1 to £1,000	2¾	3	3	3¼	3½
£1,001 to £1,500	1½	3	3	3¼	3½
£1,501 to £2,000	nil	3	3	3¼	3½
£2,001 to £2,500	nil	nil	nil	3¼	3½
£2,501 to £3,000	nil	nil	nil	nil	3½
Friendly and other Society Accounts—					
£1 to £2,000	2¾	3	3	3¼	3½
£2,001 to £2,500	1½	1¾	1½	3¼	3½
£2,501 to £3,000	1½	1½	1½	1¾	3½
£3,001 and over	1½	1½	1¾	1¾	2

(*a*) The rates shown for dates earlier than the 1st January, 1961 apply to all savings banks operating in Western Australia. From the 1st January, 1961 the rates paid by The Rural and Industries Bank of Western Australia (Savings Bank Division) have been generally ¼ per cent. higher than those appearing in the table.

INSURANCE

Life Insurance

Life insurance business throughout Australia is regulated by the Life Insurance Act 1945–1961 (Commonwealth), which requires companies to be registered by the Insurance Commissioner appointed under the Act and to establish statutory funds in relation to their life insurance transactions. The purpose of the Act, which supersedes State legislation, is to place life insurance business on a uniform basis throughout the Commonwealth and to afford protection to policy holders. Under a previous

Commonwealth Act, the Insurance Act 1932-1937, the companies were required to deposit money or approved securities with the Treasurer in order to guarantee the claims of insured persons, and this provision is continued by the present Act.

During 1962, there were 31 life insurance companies or societies operating in Western Australia. In terms of total sums insured, life insurance policies relate predominantly to ordinary endowment or whole-life insurance and superannuation, although an appreciable volume of industrial business is also undertaken.

LIFE INSURANCE

Particulars	Year				
	1958	1959	1960	1961	1962
ORDINARY AND SUPERANNUATION BUSINESS					
Number of Companies	16	19	22	27	31
New Policies Issued—					
Sum Insured £'000	27,651	33,606	44,819	48,809	55,212
Single and Annual Premiums £'000	916	1,006	1,221	1,317	1,428
Policies Existing at End of Year—					
Sum Insured £'000	176,180	198,161	229,870	261,818	298,946
Net Increase during Year—					
Sum Insured £'000	17,548	21,981	31,709	31,948	37,128
INDUSTRIAL BUSINESS					
Number of Companies	7	7	7	7	8
New Policies Issued—					
Sum Insured £'000	2,110	2,214	2,633	2,492	3,086
Annual Premiums £'000	96	103	117	111	129
Policies Existing at End of Year—					
Sum Insured £'000	21,501	21,639	22,162	22,372	23,377
Net Increase during Year—					
Sum Insured £'000	234	138	523	210	1,005
TOTAL BUSINESS					
Number of Companies	16	19	22	27	31
New Policies Issued—					
Sum Insured £'000	29,761	35,820	47,452	51,301	58,298
Single and Annual Premiums £'000	1,012	1,109	1,338	1,428	1,557
Policies Existing at End of Year—					
Sum Insured £'000	197,681	219,800	252,032	284,190	322,323
Net Increase during Year—					
Sum Insured £'000	17,782	22,119	32,232	32,158	38,133

General Insurance

General insurance is available to the public in Western Australia from a number of companies and, in some fields, from the State Government Insurance Office. There is also a Motor Vehicle Insurance Trust whose activities are confined to motor vehicle third party insurance.

During 1962, there were 132 companies operative in Western Australia, 68 of which were Australian companies. The other 64 were oversea companies, the head offices of 45 of them being located in the United Kingdom. Of the total number, 92 were " tariff " offices, being members of the Fire and Accident Underwriters' Association and issuing the standard policies of the Association at uniform premium rates. The remaining 40 were " non-tariff " companies effecting insurances at competitive rates and reinsuring direct with Lloyd's or other underwriters.

The State Government Insurance Office covers fire, marine and general insurance risks for State Government instrumentalities and semi-government and local government authorities. It also conducts some classes of insurance business for the general public, the principal transactions being workers' compensation and comprehensive motor vehicle insurance. By authority of amendments to the State Government Insurance Office Act in 1954 and 1958 the Office engages in personal accident insurance in respect of school children and students under a policy which indemnifies the parent or guardian against the cost of medical and surgical treatment and funeral and other expenses.

The following table gives details of revenue and expenditure relating to fire, marine and general insurance during each of the years from 1957–58 to 1961–62. It contains only selected items of statistics and is therefore not suitable for the construction of a " Profit and Loss " statement or " Revenue Account". The amounts shown as " Premiums " represent the full amount receivable in respect of policies issued or renewed during the year, less returns, rebates and bonuses paid or credited to policy holders during

the year. They are not adjusted to provide for premiums unearned at the end of the year and consequently the amounts differ from " earned premium income " appropriate to the year. The amounts shown as " Claims " include provision for outstanding claims and represent claims or losses incurred during the year. Salvage and other amounts recoverable have been deducted. The operations of the State Government Insurance Office are included, but figures for 1958–59 and earlier years exclude insurances effected by the Office on behalf of State Government, semi-government and local government authorities and on property in which the Government has a financial interest. The transactions of the Motor Vehicle Insurance Trust are not included, but are shown in the first table on page 220. The figures shown under the heading of Contributions to Fire Brigades represent payments made to the Western Australian Fire Brigades Board for the operation and maintenance of fire brigades, as required by the Fire Brigades Act.

FIRE, MARINE AND GENERAL INSURANCE (*a*)
(£'000)

Particulars	Financial Year				
	1957–58	1958–59	1959–60	1960–61	1961–62
REVENUE					
Premiums—					
Motor Vehicles	2,579	2,754	2,938	3,161	3,239
Fire	1,972	2,051	2,161	2,272	2,359
Workers' Compensation	1,452	1,559	2,300	2,517	2,844
Personal Accident	405	448	538	547	604
Hailstone	312	573	531	603	520
Marine	298	325	448	484	518
Other Classes	783	875	1,060	1,220	1,373
Total Premiums	7,801	8,585	9,976	10,804	11,457
Other (Interest, Dividends, Rents, etc.)	231	263	321	342	436
Total—Revenue	8,032	8,848	10,297	11,146	11,893
EXPENDITURE					
Claims—					
Motor Vehicles	1,560	1,756	1,937	2,308	2,257
Fire	451	548	539	954	742
Workers' Compensation	1,302	1,316	1,848	2,062	2,108
Personal Accident	184	199	267	261	337
Hailstone	66	400	302	152	44
Marine	105	108	196	295	230
Other Classes	236	255	246	353	409
Total Claims	3,904	4,582	5,335	6,385	6,127
Other—					
Management Expenses	1,654	1,836	2,044	2,292	2,462
Commission and Agents' Charges	867	945	941	956	1,034
Taxation	212	259	305	244	369
Contributions to Fire Brigades	213	238	258	282	293
Total—Expenditure	6,850	7,860	8,883	10,159	10,285

(*a*) Excludes transactions of the Motor Vehicle Insurance Trust (see table on page 220). Includes operations of the State Government Insurance Office, but figures for 1958–59 and earlier years exclude insurances effected by the Office on behalf of State Government, semi-government and local government authorities and on property in which the Government has a financial interest.

Motor Vehicle Third Party Insurance

Third party insurance in connexion with motor vehicle accidents became compulsory on the 1st July, 1944 under the provisions of the Motor Vehicle (Third Party Insuranee) Act of 1943. The Motor Vehicle Insurance Trust was established by an amendment to the Act in 1948 and comprises the general manager of the State Government Insurance Offiee, three members nominated by the Fire and Accident Underwriters' Association of Western Australia and one nominee of those approved insuring organizations which are not members of the Association.

The Trust administers a Motor Vehicle Insurance Fund in which approved insurers participate. Premiums received from motor vehicle third party insurance and revenue from other sources constitute annual " pools " and, after payment of claims and other expenses appropriate to each pool, the resulting profit or loss is shared by the participating insurers, which include the State Government Insurance Office. These shares cannot be finally determined until the last claim is paid and it is usually several

years before a pool has satisfied all the claims attributable to it. For this reason, the figures given in the following table are subject to progressive revision as the business of each pool approaches finality.

MOTOR VEHICLE INSURANCE TRUST

Revenue and Expenditure	Pool (‡) for the Year—				
	1957–58	1958–59	1959–60	1960–61	1961–62
Revenue—	£	£	£	£	£
Net Premiums	731,244	754,938	809,224	988,200	1,054,778
Interest Received	59,523	59,739	66,729	84,219	65,510
Total Revenue	790,767	814,677	875,953	1,072,419	1,120,288
Expenditure—					
Claims Paid (*a*)	804,281	885,712	1,025,160	1,053,523	1,165,295
Commission	5,570	6,038	6,444	6,904	7,397
Management Expenses	25,296	26,545	31,932	44,063	45,787
Taxation	1,629	1,516	1,711	1,909	2,010
Total Expenditure	836,776	919,811	1,065,247	1,106,399	1,220,489

(‡) See accompanying letterpress *Motor Vehicle Third Party Insurance.* (*a*) Including estimated outgoings.

Health Insurance Organizations

Voluntary health insurance is offered by a number of organizations which provide one or more types of benefit covering such items as hospital and medical fees, funeral expenses and sick pay to or on behalf of contributing members and their dependants. They include societies registered under the Friendly Societies Act, 1894–1956 and other organizations registered under the National Health Act 1953–1962 (Commonwealth).

Benefits are available in a wide range to meet the cost, either wholly or in part, of such services as treatment by a general or specialist medical practitioner (including surgical operations and obstetrical attention), X-ray, cardiographic and pathological examinations, physiotherapy, dental treatment, hospital care, home nursing and ambulance transport. In many cases, the Commonwealth Government pays a benefit additional to that received from the organization. Reference to these additional benefits is made in Chapter V—*Social Condition.* Members of friendly societies may contribute also for the supply of medicines and some societies maintain endowment assurance funds and supplementary death benefit funds.

The following table gives details, for the years 1957–58 to 1961–62, of the membership and the financial activities of friendly societies registered under the Friendly Societies Act. " Benefit " members are those who contribute to the Sick and Funeral Fund of a society and " honorary " members are principally those who pay only for medical and hospital benefits.

FRIENDLY SOCIETIES

Particulars	Financial Year				
	1957–58	1958–59	1959–60	1960–61	1961–62
Number of—					
Registered Societies	12	12	12	12	12
Branches	270	266	262	261	258
Members at end of Year—					
Benefit Members (*a*)	20,496	19,753	19,134	18,493	17,898
Honorary Members (*a*)	20,421	22,501	23,703	24,775	25,367
Sickness Benefits—					
Number of Members Paid	3,607	3,620	3,396	3,172	3,042
Number of Weeks of Sick Pay	54,878	56,931	57,540	57,140	55,343
Revenue—	£	£	£	£	£
Fees, Contributions and Levies	452,534	489,159	529,088	616,433	641,755
Interest and Rent	54,535	56,390	56,202	58,292	60,266
Other	43,039	23,382	33,176	32,489	14,068
Total	550,108	568,931	618,466	707,214	716,089
Expenditure—					
Sick Pay	25,613	26,281	25,000	24,363	23,443
Medical Attendance and Medicine	354,652	398,864	430,541	518,948	541,772
Death Benefits	17,317	18,768	16,642	19,937	21,452
Administration	52,130	56,107	58,133	60,675	63,188
Other	37,641	25,582	32,480	37,470	69,388
Total	487,353	525,602	562,796	661,393	719,243
Balance of Funds at end of Year	1,375,611	1,418,940	1,474,610	1,520,431	1,517,277

(*a*) " Benefit " members are those who contribute to the Sick and Funeral Fund of a society and " honorary " members are principally those who pay only for medical and hospital benefits.

BUILDING SOCIETIES

Building societies in Western Australia are registered under the provisions of the Building Societies Act, 1920–1962 primarily for the purpose of raising funds to assist members by granting loans, secured on mortgage, to build or acquire homes. They also provide a means of investment for shareholder members, trustee funds and other depositors. The funds of the societies may be in the form of payment for fully-paid shares, subscriptions for contributing shares, money placed on deposit, or negotiated loans. Another important source of revenue became available to the societies in 1956–57 when, under the Housing Agreement Act 1956 (Commonwealth), it was provided that moneys should be allocated to approved institutions from Commonwealth funds advanced to the States in terms of the Commonwealth and States Housing Agreement. (Reference is made to this Agreement in Chapter V—*Social Condition*.) A requirement of the Act that these institutions should receive not less than 30 per cent. of total advances made to the State during each of the financial years 1958–59 to 1960–61 is continued for a period of five years from the 1st July, 1961 in terms of the Housing Agreement Act 1961 (Commonwealth).

The Building Societies Act Amendment Act of 1961 created an office of Registrar of Building Societies separate from that of Registrar of Friendly Societies. By its provisions there is constituted a Building Societies Advisory Committee of five members, comprising the Registrar as chairman, the President of the State Branch of the Commonwealth Institute of Valuers, an officer of the State Public Service, and two persons experienced in building society management.

The following table shows details of the activities of societies operative during the years 1957–58 to 1961–62. Not all bodies registered under the Building Societies Act are included, since some societies which became registered in anticipation of assistance from Commonwealth-State funds have not commenced operating, having failed to receive an allocation of money from this source.

BUILDING SOCIETIES

Particulars	Financial Year				
	1957–58	1958–59	1959–60	1960–61	1961–62
Number of—					
Societies	12	16	20	19	24
Members	25,413	27,316	27,707	26,816	26,482
Borrowers	5,187	5,835	6,493	7,285	7,802
	£	£	£	£	£
Investors' Deposits and Share Subscriptions	1,359,925	1,418,979	2,039,820	2,098,915	2,128,260
Repayment of Mortgage Advances	759,805	857,530	978,510	1,008,181	1,258,302
Interest on Mortgage Advances	314,723	397,526	496,851	611,803	738,356
Commonwealth-State Housing Advances	685,975	744,982	821,790	921,448	885,391
Loans Granted	1,889,976	2,233,867	2,709,921	2,862,765	3,172,739
Working Expenses	56,498	80,020	87,353	91,697	106,790
Assets at end of Year	5,968,489	7,393,159	9,134,296	11,035,783	13,126,438

BANKRUPTCY

Under the provisions of the Bankruptcy Act 1924–1960 (Commonwealth), which is administered by the Attorney-General, the State of Western Australia is a proclaimed Bankruptcy District and the Supreme Court of Western Australia has federal jurisdiction in bankruptcy matters. There is a Registrar in Bankruptcy whose duties include the holding of public sittings for the examination of bankrupts, the examination of witnesses, the issuing of bankruptcy notices and creditors' petitions, and such other duties as are specified in the Act or delegated to him by the Court. Another bankruptcy officer is the Official Receiver, who acts under the general authority and direction of the Court and whose duties relate to the conduct of the debtor and to the realization and administration of his estate.

An order for the sequestration of an estate may result from a petition by either the debtor or the creditors. In cases where it appears certain that the assets of a deceased estate will be insufficient to meet the debts, the executor or a creditor may petition to have the estate administered in bankruptcy.

Compositions, schemes of arrangement and deeds of assignment are provided for in Part XI, and deeds of arrangement in Part XII, of the Act. A debtor may call a meeting of his creditors and either compound with them to pay a certain sum in the £ as full settlement of his debts or enter into a scheme of arrangement allowing him a specified time in which to pay. On the other hand, his creditors may require him to execute a deed of assignment, by which control of his affairs passes to a trustee registered under the Act, or to file a petition in bankruptcy.

The following table relates to bankruptcy proceedings during each of the years from 1957–58 to 1961–62.

BANKRUPTCY PROCEEDINGS

Particulars	Financial Year				
	1957–58	1958–59	1959–60	1960–61	1961–62
Sequestration Orders (*a*)—					
On Creditors' Petitions	27	22	24	27	16
On Debtors' Petitions (*b*)	89	89	95	100	125
	£	£	£	£	£
Assets	61,098	100,888	132,130	81,792	90,253
Liabilities	210,598	472,900	370,359	256,132	308,944
Compositions, Assignments and Deeds of Arrangement—					
Number (*b*)	96	95	80	79	97
	£	£	£	£	£
Assets	516,999	674,440	282,917	246,589	404,106
Liabilities	582,841	584,764	261,047	293,480	573,588

(*a*) Includes orders for administration of deceased debtors' estates. (*b*) Includes petitions by legal personal representatives of deceased debtors.

CHAPTER VII

LAND TENURE AND SETTLEMENT, WATER CONSERVATION AND SUPPLY

PART 1—LAND TENURE AND SETTLEMENT

An outline of the origin and development of the land tenure system in Western Australia from the early years of settlement is given in Chapter VII of the *Official Year Book of Western Australia, Nos. 1* and *2 (New Series)* and reference is made to the main developments in the *Chronological Notes from 1829* in Chapter I of the present issue.

The growth of land settlement in relation to particular agricultural and pastoral activities is dealt with in the relevant sections of Chapter VIII, in the *Chronological Notes* and in the *Statistical Summary from 1829* appearing after Chapter X.

LEGISLATION AND ADMINISTRATION

By the Land Act of 1898, earlier legislation relating to the sale, occupation and management of Crown lands was consolidated and amended. Under a series of Agricultural Lands Purchase Acts which were passed between 1896 and 1904 and consolidated by the Agricultural Lands Purchase Act, 1909, provision was made for the repurchase by the Crown of land suitable for closer settlement. The principal criteria applied in the purchase of such land were suitability for wheat or mixed farming and proximity to transport, especially the railways.

The operation of subsequent legislation has not greatly changed the pattern of land development which was created by the Land Act, 1898, and the Agricultural Lands Purchase Act, 1909. The Land Act, 1933–1962, is now the basic statute controlling the leasing and disposal of Crown land. Closer settlement legislation relates predominantly to schemes for the benefit of returned war-service personnel. Crown land is also leased under the Mining Act, 1904–1961, the Petroleum Act, 1936–1954 and the Forests Act, 1918–1954, but no alienations are made under these Acts. In most freehold or leasehold titles of a residential, agricultural or pastoral nature the mineral rights and, in many instances, the timber rights are reserved to the Crown.

The Department of Lands and Surveys is responsible for the leasing and alienation of Crown land, except where mining and forestry tenures are involved. It incorporates the Surveyor-General's Division and the Land Settlement Branch and is under the control of the Minister for Lands. In certain instances, advisory or partly-executive boards have been created to assist in administration. These include the Land Board, which deals with general applications for land, the Land Settlement Board which is concerned with closer settlement areas, and the Bush Fires Board.

Permits and leases for mining purposes are issued by the Mines Department and those for forestry and timber milling by the Forests Department.

METHODS OF LAND ALIENATION

The principal methods of alienation provided for in the Land Act, 1933–1962 are conditional purchase, public auction, private tender, selection under Part VIII which supersedes the Agricultural Lands Purchase Act, endowment (including free Crown grants) and reservation for public purposes.

Conditional Purchase

Titles secured by this method originally take the form of conditional purchase leases, on the satisfactory conclusion of which Crown grants may be obtained. The Act provides that a person shall not be competent to acquire, either as lessee or transferee, an area of land exceeding in the aggregate 5,000 acres ; but on the recommendation of the Minister and with the approval of the Governor, it shall be competent for a person to acquire an area of land in one or more parcels exceeding 5,000 acres, but not in any event exceeding 10,000 acres, in any case where the Minister is satisfied that a holding requires an area greater than 5,000 acres in order to be of a standard deemed by the Minister an economic farm unit. The minimum purchase price of land acquired by conditional purchase is two shillings per acre and the pur-

chaser must pay the costs of survey as well as the value of any improvements effected by the Government. In addition, he must fence at least one-half of the land within the first five years of the conditional purchase lease and the whole of it within the first 10 years. Expenditure on prescribed improvements is required to equal at least one-fifth of the purchase money during each of the first 10 years and, if the Minister so directs, an adequate water supply must be provided within the first two years.

The maximum period allowed for completion of purchase under an ordinary conditional purchase lease ranges from 25 to 30 years, with a possible extension of 10 years in certain cases. There is, however, provision for conditional purchase by means of accelerated payments under which a 10 per cent. deposit is lodged and the balance of the purchase price paid in four quarterly instalments. The improvement conditions for accelerated-payment leases require that the land shall be fenced within three years of the commencement of the lease and that improvements, equal in value to the purchase money, shall be effected within seven years. Unlike the ordinary conditional purchase lease, which cannot be converted to a Crown grant until the expiry of at least five years from the date of commencement, an accelerated-payments type of lease can be converted to a Crown grant at any time after the conditions have been met. Residential conditions, requiring that the lessee or a near relative shall reside on the property for at least six months in each of the first five years, attach to the ordinary conditional purchase leases but are not obligatory under accelerated-payment leases. Restrictions on transfer are imposed in each case.

Provision is made for conditional purchases of land out of pastoral leases, but these are of a comparatively minor nature designed to grant titles over particular portions of large properties.

Sale by Public Auction

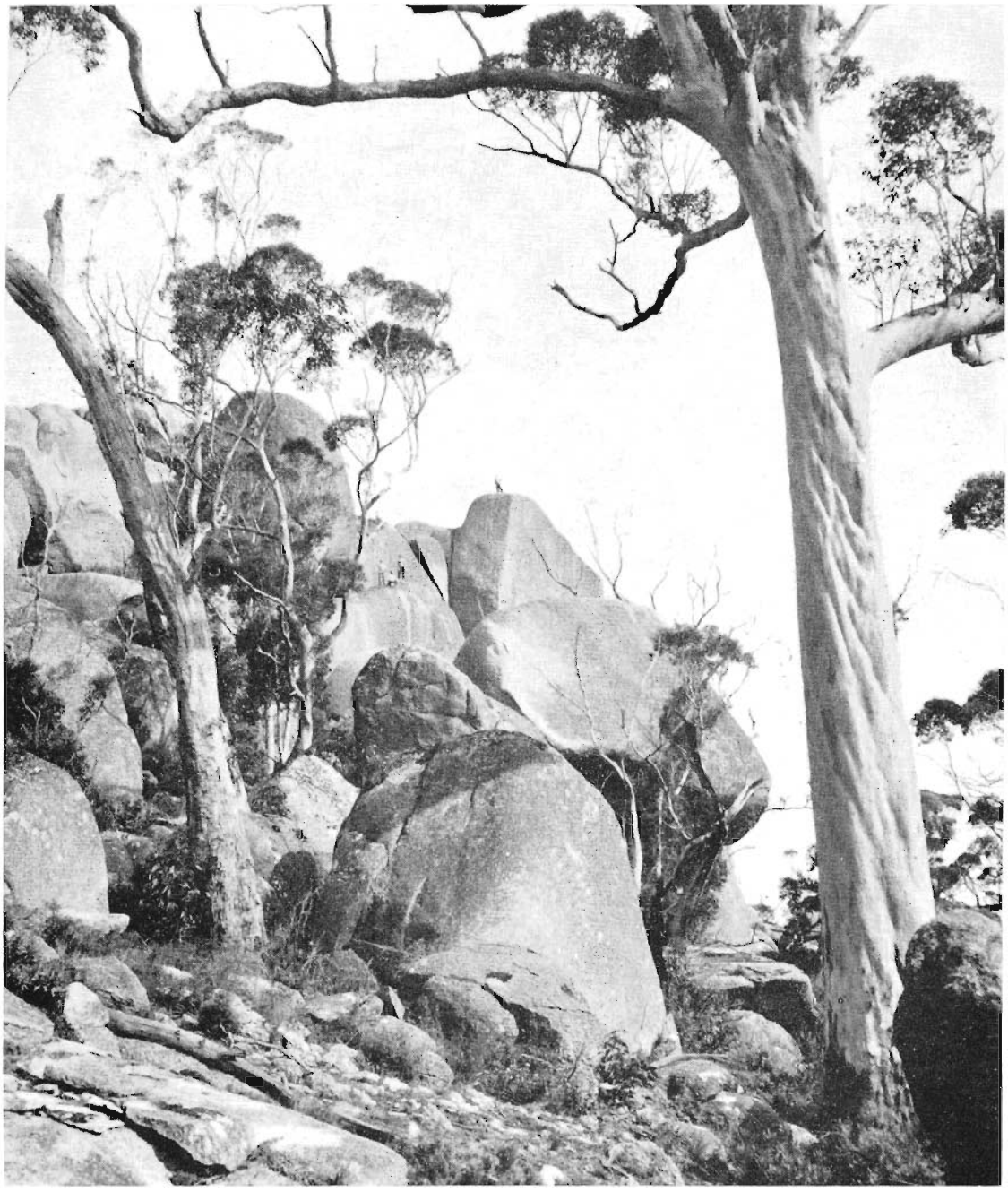
The general conditions governing the sale to the public by auction of town or suburban land are set out in Part IV of the Land Act. Lands may be offered for sale by order of the Minister at such times and places as he may think fit, and notice of forthcoming sales must be published in the *Government Gazette* and in a newspaper. Ten per cent. of the purchase money must be paid at the time of the sale and the balance in four equal quarterly instalments. The purchaser may be required to fence the land on the surveyed boundaries within two years after the sale. Town or suburban land acquired at auction by instalment purchase is regarded as being held on licence until general requirements such as fencing and other prescribed improvements have been met, after which a grant in fee simple may be issued. In some instances special additional conditions may be imposed. In certain circumstances the Governor may dispense with the requirements as to sale of town and suburban lands by public auction and may approve of any such lands being offered for sale in fee simple or for leasing.

Sale by Private Tender

Sales by private tender, which are also called negotiated cash sales, are comparatively rare and usually relate to unwanted War Service Land Settlement farms and to areas set apart as special settlement lands.

Endowment of land and reservation for public purposes

Few disposals of Crown land by way of endowment or free grant are now made. However, it is within the power of the Governor to dispose of, in any manner which serves the public interest, lands which are vested in the Crown. Crown land is frequently reserved by order of the Governor for a variety of public purposes, and where alienation is ultimately required for certain of such purposes the necessary land is granted in fee simple in trust for the purpose of the reserve. Grounds for reservation include :— the general requirements of the Government (*e.g.*, public works and buildings ; conservation of water, timber and indigenous flora and fauna ; housing ; public health and social welfare) ; the benefit of the aboriginal inhabitants ; local government needs for such purposes as the provision of town halls and other buildings, public utilities, social amenities, sports grounds and cemeteries ; sites for churches, hospitals and other institutions ; sites for clubs and club premises ; mining and quarrying purposes ; public parks ; and the provision of camping and watering places for travellers and stock. Reserves may be of class "A", which by proclamation of the Governor are reservations that must remain dedicated to the purpose declared in their proclamation until by Act of Parliament it is otherwise enacted, or classes " B " and " C ", which are terminable by the Governor on notice in the *Government Gazette*. In the case of class " B ", however, the Land Act provides that in the event of cancellation, a special report by the Minister shall be



PORONGORUPS NATIONAL PARK

CASTLE ROCK

The Porongorups National Park covers an area of 5,384 acres in the Porongurup Range about thirty miles north of Albany. The Park is a flora and fauna reserve. Castle Rock, the summit of which is almost 2,000 feet above sea-level, is a prominent feature and commands panoramic views extending to the Stirling Range in the north and King George Sound and the Southern Ocean in the south.

presented to Parliament setting forth the reasons for such cancellation and the purpose to which it is intended to devote the land. Common uses of class " A " reserves are for public recreation or amusement and for major public buildings. All reserves under Part III of the Act that are not proclaimed as class " A " are classified as either " B " or " C ".

The Land Act provides that, when any reserve is not immediately required for the purpose for which it was made, the Governor may grant a lease for a period not exceeding 10 years at such rents and subject to such conditions as he may think fit. Land reserved for parks or recreation grounds may be leased for the depasturing of stock even though the land is being used for the purpose for which it is reserved.

Other methods of alienation comprise mainly reservations of land for housing projects. Individual occupiers may acquire freehold title subject to certain conditions. Otherwise the land remains under Crown lease.

State Forests and Timber Reserves

In addition to the foregoing types of alienation, special provision is made in the Forests Act, 1918–1954, for the Governor, by Order in Council, to dedicate Crown land as a State Forest or to reserve Crown land as a Timber Reserve. While the reservation of a Timber Reserve may be revoked in whole or in part by the Governor in Council, the dedication of a State Forest may not be revoked except with the consent of both Houses of Parliament. The use of such Forests and Reserves comes within the administration of the Conservator of Forests.

METHODS OF LEASING

Brief reference has already been made to the work of the Departments of Lands and Surveys, Mines and Forests in granting leases of Crown lands in Western Australia. The activities of each Department in this field are now described in greater detail.

Lands Department

Approximately 98 per cent. of the Crown land held under lease is covered by tenures granted by the Department of Lands and Surveys under the Land Act, and consists mainly of pastoral leases, special leases, leases of reserves and leases of residential lots. In addition, areas of perpetually-leased farming land have been made available to ex-servicemen under the War Service Land Settlement Act.

Pastoral Leases—The maximum area which may be held by a lessee, either in his own right or when beneficially interested as a shareholder in an incorporated company, is one million acres. The minimum area depends on the Land Division in which the lease is sought, and varies between 3,000 and 50,000 acres. These minimum areas may be reduced in any Division if proximity of other properties makes it necessary.

The term of all pastoral leases taken up under the Land Act of 1898 was due to expire at the end of 1928 but by amending legislation they could be renewed up to the 31st December, 1948. Under current legislation, which was passed in 1933, all leases will now expire on the 31st December, 1982.(1) Rents are determined by the Minister for Lands on the advice of a Pastoral Appraisement Board and are subject to re-appraisement at statutory intervals.

The lessee is required to effect improvements within the first five years to the value of £5 per 1,000 acres and within the first 10 years to the value of £10 per 1,000 acres. In addition, a pastoral lease is liable to forfeiture if it is not stocked within the first two years at the rate of 10 head of sheep or two head of large stock per 1,000 acres, or within five and eight years at rates which are respectively double and treble these amounts. Stock numbers are expected to be maintained at least at the eighth-year level for the remainder of the term of the lease. Relief from rent is granted where there have been severe losses of stock or reduction in woolclip due to drought, cyclone or flood. No transfer, mortgage or sub-lease can be effected in respect of a pastoral lease without the consent of the Minister for Lands.

Special Leases—Section 116 of the Land Act specifies a variety of industrial and other purposes for which the Governor may grant special leases of Crown land. The yearly rental must be not less than £2 and the period of the lease must not exceed 21 years. It is further provided that, in all cases where the intended period of leasing exceeds 10 years, prior notice must be inserted in the *Government Gazette*.

Leases of Reserves—As stated earlier in this Chapter in the section *Methods of Land Alienation* the Governor may grant a lease of any reserved land which is not immediately required for the purpose intended at the time of reservation, but the period of the lease may not exceed 10 years. By a further

(1) See *Appendix*.

provision of the Land Act, no lease for a term exceeding one year shall be granted unless applications are called by notice in the *Government Gazette*. With the consent of the Governor, such land may be sub-leased. When land is reserved for parks or for recreation or amusement, if the land is not placed under the control or management of any person the Governor may, even though the land is being used for the purpose for which it is reserved, grant a lease or licence for one year for the purpose of depasturing stock. The Governor may insert in the lease or licence such conditions as he may think fit to ensure that the land is available for the purpose for which it is reserved and he may renew any lease or licence for a further period of one year.

Leases of Residential Lots—The Governor may lease any town or suburban lands on such terms as he may think fit. The usual procedure is to offer a lease at public auction. Unless otherwise specified, any lessee of town or suburban lands acquired at public auction may apply to purchase the fee simple of the land. Provision is also made for approval of any town or suburban lands being offered for leasing during a period not normally exceeding 99 years, as distinct from public auction. These leases are not convertible to freehold.

Perpetual Leases are authorized under the War Service Land Settlement legislation, which provides that ex-servicemen who have been allotted farms under this joint Commonwealth-State scheme and who meet the requirements of the appropriate agreement may enjoy perpetual leases. The lessee, on payment of such purchase price for the fee simple as is fixed by the Minister, may obtain the freehold of the property after the expiration of 10 years from the commencement of the term of the perpetual lease or after such shorter period as the Commonwealth and the State have determined or may determine where special circumstances exist.

Mines Department

Under the provisions of the Mining Act, 1904–1961, various special tenures, of which gold-mining leases, mineral leases and coal-mining leases are the most important, are granted by the Governor in connexion with the mining of gold, coal and other minerals. The Act contains provisions relating to the payment of fees, rents and royalties. The royalty provisions were extended by an amendment of the Act in 1957 to embrace most minerals and precious stones as notified in the *Government Gazette* of the 20th May, 1958. The Governor may exempt any person or class of persons from the payment of royalties.

Oil search permits and licences are granted by the Minister for Mines and petroleum leases by the Governor under the provisions of the Petroleum Act, 1936–1954, with authority to charge fees, rents and royalties.

Gold-mining Leases—As well as conveying a right to mine for gold to any depth, a gold-mining lease permits the construction of all necessary buildings and plant within the area which it defines. Where, in the opinion of the Minister, land is likely to contain alluvial gold, it is normally exempted from lease. However, a lease may be granted if the Minister is satisfied that the land, having already been worked for alluvial gold, has been abandoned or that there is sufficient reason for waiving the exemption. In such cases the lease may range in area up to 48 acres. In all other instances the maximum area is 24 acres. Leases must, where practicable, be rectangles with a length not exceeding twice the width.

The term of any gold-mining lease shall not exceed 21 years, but shall have a right of renewal for a further 21 years, and the conditions provide that for the first year it must be manned by at least two men and for the remainder of its term by at least two men, or one man for every six acres, whichever is the greater. Subject to certain adjustments of these labour conditions, a person may hold two or more leases as an amalgamated group, provided that the group does not total more than 96 acres and that the length along the line of lode does not exceed 66 chains. A rent of 5s. per acre is charged during the first year and £1 per acre during the following years. The grant of a gold-mining lease conveys an exclusive right to mine for gold or other minerals within the bounds of the lease, but excludes rights in respect to petroleum.

Mineral Leases—Mineral leases authorize the holders to mine for a specified mineral or combination of minerals to any depth within the confines of the lease and convey the same construction rights as a gold-mining lease. The term of any mineral lease shall not exceed 21 years, but shall have a right of renewal for a further 21 years. Except under special conditions, including the payment of royalty, as set out in the Act, land held under a mineral lease may not be mined for gold. Land which is proved to the satisfaction of the Minister to consist of payable alluvial ground is normally exempted from lease. If, however, a tract of land has already been worked as alluvial ground and has been abandoned, or the Minister is satisfied that there is sufficient reason for waiving the exemption, leases may be granted for

areas not exceeding, individually, 96 acres. In all other cases mineral leases may not exceed 48 acres and, where practicable, must be rectangles of a length not exceeding twice the width. The labour conditions provide that a mineral lease must be manned by at least two men for the first twelve months and thereafter by at least one man for every six acres or fraction thereof, with a minimum of two men. An annual rent of 5s. per acre is charged. Leases may, at the discretion of the Minister, be amalgamated in working, but the total area may not exceed 96 acres and the total length along the line of reef or lode may not exceed 90 chains.

Coal-mining Leases—Individual leases for coal mining have a maximum area of 320 acres. The term of any coal-mining lease shall not exceed 21 years, but shall have a right of renewal for a further 21 years. Such leases must be efficiently worked during the first twelve months by at least one man, during the next twelve months by at least two men and during each succeeding year of the lease by at least three men, for every 60 acres or part thereof contained in the lease. The yearly rent of coal-mining leases is sixpence per acre and a royalty of threepence per ton is payable on all coal raised during the first 10 years of the lease, rising to sixpence per ton during the remainder of the term. The Mining Act, 1904–1961 provides for certain royalty rebates on newly-discovered coal deposits, while the Mining Regulations contain special provisions regarding development of the deposits in the Collie district, the only area where coal is being mined in the State.

Other Mining Tenements

Mineral Claims—An area not exceeding 300 acres may be applied for as a mineral claim, but the length must not exceed twice the breadth. The rent for a mineral claim is calculated at the rate of 2s. 6d. per annum per acre. Working conditions require that not less than three men shall be continuously employed for every 100 acres or fraction thereof.

Dredging Claims—Application may be made for dredging claims for gold or minerals in lakes, swamps, marshes, or rivers and the land adjacent thereto, or on the foreshore of, and land under, the ocean. The maximum area of a dredging claim shall not exceed 300 acres. Except in the case of river claims, where there is no restriction on width, the minimum width at right angles to the bank or shore edge shall not be less than 15 chains. A river claim shall not exceed six miles in length. Working conditions require that not less than three men shall be continuously employed on the claim and, in addition, machinery of not less value than £1,000 shall be continuously employed.

Temporary Reserves—To encourage mining, provision is made for the creation of Temporary Reserves of Crown land by the Minister, and an Authority to occupy such reserve for the purpose of searching for gold or other minerals may be granted. In the case of gold, these Temporary Reserves may not exceed 300 acres except for deep alluvial, when there is no restriction as to the area. Temporary Reserves for all other minerals are not restricted as to area. In the event of any mineral being found by the occupier of a Temporary Reserve, he is required to acquire normal mining tenements before he may commence productive mining.

Miners' Homestead Leases—A miner who is not less than 18 years of age and is resident on a goldfield or mineral field, or any incorporated company, may apply for a homestead lease of Crown land within the field. In appropriate circumstances a miner may hold more than one such lease, but the aggregate area may not exceed 20 acres within two miles of the nearest boundary of a townsite or suburban area, or 500 acres elsewhere. However, these maximum areas may be exceeded by the acquisition by transfer of land comprised in a Miners' Homestead Lease which has been in existence for a period exceeding 10 years. During the first 20 years of the lease an annual rent of 2s. per acre is charged where the total area does not exceed 20 acres and for larger areas the annual rental is sixpence per acre. After 20 years the rent is 1s. per annum if demanded. Basic improvements must be made by the lessee within the first six months and the land must be fenced on its boundaries within three years after survey of the lease. Improvements to the value of 10s. per acre must be made within the first five years following survey.

Tenures under provisions of the Petroleum Act, 1936–1954—Exclusive petroleum search rights over an area of not less than 1,000 square miles may be granted in the form of a Permit to Explore which is valid for two years with further annual renewals at the discretion of the Minister for Mines. A fee of £100 is payable on application for a Permit and where it is granted the successful applicant is required

to lodge with the Under Secretary for Mines a bond of £1,000. It is further provided that a geologist must be engaged, that drilling be confined to " scout " drilling and have the Minister's approval, and that the Minister be supplied at regular intervals with full information concerning operations.

Any holder of a Permit to Explore may apply for a Licence to Prospect within a defined portion of the area covered by the Permit. A Licence to Prospect cannot cover more than 200 nor less than eight square miles and the licensee must put up a bond of not less than £1,000. The licence is valid for two years and the Minister may grant three successive renewals for further periods of one year each. For an annual fee, based on the rate of 5s. per square mile during the first year of the licence (maximum fee, £12 10s.) and on 10s. per square mile in subsequent years (maximum annual fee, £25), the licensee has the exclusive right to prospect for petroleum within the specified area. Drilling arrangements require the approval of the Minister and operating information must be supplied to him at regular intervals.

A holder of a Licence to Prospect may, upon discovering petroleum within his area, select as a Petroleum Lease or Leases so much of his licence area as he requires if the licence was granted on or before the 1st January, 1955 or select not more than half the land if his licence was granted after that date. The balance of the area contained in the Licence to Prospect reverts to the Crown and may be disposed of upon such terms and conditions as the Governor may determine, subject to the holder of the Licence to Prospect being granted first right of acquisition upon those terms and conditions. A bond of £1,000 must be lodged with the Under Secretary for Mines when the lease is granted.

The area of a Petroleum Lease must not be greater than 100 square miles nor, unless approved by the Minister, less than four square miles. Initially, the term is for 21 years and there is an option of renewal for any further period during which petroleum in payable quantities is produced. A rental of £10 per annum is charged for every square mile or portion of a square mile comprising the lease. The Act provides for the fixing of the rate of petroleum royalty when a lease is granted.

Miscellaneous mining tenures—The leases and licences detailed above are those which are fundamental to mining development but there are several additional tenures which are issued in order to assist the processes of mineral extraction and treatment. These incidental tenures include rights to operate tramways, to conserve and convey water, and to store machinery.

Forests Department

While not designated as leases, certain of the tenures issued under the Forests Act, 1918–1954, such as Sawmilling Permits and Mill Site Permits, are similar in effect.

Sawmilling Permits—A Sawmilling Permit entitles the holder to sole cutting rights in respect of certain classes of timber within a defined area and for a specified period. The cutting programme to be followed by the permit holder must be of such a nature that the forest resources of the area are used to the best advantage and that provision is made for forest regeneration. In consequence, cutting within the permit area is controlled by the Forests Department under a system of defined " coupes," each of which is cut over and closed in turn. Each sawmilling permit holder is required to fall and deliver logs to the mill at a prescribed rate, and to supply the Forests Department with details of the logs taken and the timber cut therefrom.

Sawmilling permits are of major importance because of the capital outlay involved and the area is usually selected so as to give a cutting life of about 30 years. However, the usual practice is to grant the permits for a term of one year, subject to annual renewals. The royalty payable is determined by the sale of cutting rights by auction or by tender, the minimum royalty having first been established by the Forests Department.

Sawmill Site Permits—It is obligatory upon all holders of Sawmilling Permits to erect an efficient sawmill within a short period after the granting of the permit. The sawmill may be erected outside the sawmilling permit area. If, however, a mill is to be established on Crown land, a Sawmill Site Permit must first be obtained. An area not exceeding 50 acres may be leased to the sawmilling permit holder by the Conservator of Forests for this purpose and the annual rental is £3 for every 10 acres or part thereof. The holder of a Sawmill Site Permit is responsible for the buildings erected and must, if required, submit plans of all such buildings to the Conservator of Forests for his approval.

Other leases, licences and permits—A number of other leases, licences and permits are issued by the Forests Department, one of which, the Forest Produce Licence, authorizes the licensee to collect various types of forest products other than millable timber. Important examples of this form of licence are those granted on the goldfields and in the wheat belt for the cutting of mining and farm timber and

firewood and there are special regulations controlling the collection of sandalwood. Provided forestry interests are not prejudiced, the Department also issues Forest Leases, which confer grazing, agricultural or similar rights over forest areas for any term not exceeding 20 years.

Permits involving lesser areas provide residential sites for workmen employed in timber production, and business sites for establishments meeting the normal needs of sawmilling communities. They are issued over small areas of State Forests, usually within sawmilling permit areas, and are granted on a yearly basis at a rental of £3 per annum. Permits are also granted for apiary sites of an area not exceeding three acres. They are issued to persons who are actively engaged in bee keeping and who have at least 25 hives of bees in the State. A permit may not be issued for an apiary site on Crown land if it is within two miles of a site already granted to another apiarist, and not more than four permits may be held for every 50 hives of bees owned.

LAND CLASSIFICATION

Large-scale as well as detailed land classification measures have been developed progressively in Western Australia, the basic data being the reports made by surveyors when traversing and mapping new tracts of land. From the early years of land settlement the staff surveyors of the Lands Department have commented generally on the nature of the country in which they were working and a practical guide to land utilization prospects has been obtained. By such methods the settlement potentialities of the State's area of 975,920 square miles first became approximately known, and the Surveyor-General has estimated that about 11 per cent. of the total area is represented by agricultural areas, 52 per cent. by pastoral areas and the remaining 37 per cent. by practically unoccupied areas of the interior.

In the agricultural and the pastoral areas, detailed classifications have been facilitated by the comments of surveyors when dealing with individual blocks and, although frequent use is now made of soil analyses, surveyors' reports are still the basis for classifying salable or leasable Crown land as First, Second or Third Class. The classification system dates back to 1909 and is used primarily to put a price on land but another important function is to ensure, as far as possible, that newly-selected farms are of sufficient size, with adequate amounts of suitable soil, to make an economic unit. Not only are soils classified, but the positions of rivers, creeks, swamps, hills and valleys are taken into account. When assessing the economic prospects of an area it is consequently possible to make allowance for types of soil, the adequacy of water supplies, the proximity of roads and railways and the costs of development. In arriving at an equitable price, all these factors are considered.

In addition to this general method of classifying land for agricultural or pastoral purposes, a considerable area of forest country has been classified by ground survey and by aerial photography and the Mines Department carries out a continuous geological survey. Substantial use is also made of aerial photography and photographic and photogrammetric methods by the Mapping Branch of the Lands and Surveys Department.

OCCUPATION OF LAND

The following table shows, for a selection of years during the period from 1900 to 1962, the areas of land absolutely alienated or in process of alienation and of Crown land held under certain types of lease or licence. For the years 1900, 1910 and 1920 the basis of classification according to Department has been made to conform to current practice in the issue of leases and licences. For example, tenures relating to forests, which were originally issued by the Lands Department and later by the Mines Department, have been shown for those years under the heading of Forests Department. For 1930 and later years the figures are as recorded by the Departments concerned. The types of tenure included under the several departmental headings are indicated in the footnotes to the table.

Land which is shown as " absolutely alienated " consists mainly of farming areas, acquired originally as Conditional Purchase Leases and subsequently alienated under Crown grant. While held under lease prior to alienation they account for most of the land shown as " in process of alienation." These two sets of figures taken together consequently give a broad indication of the increased use of land for agricultural purposes during the period under review. Similarly, variations in the area occupied as sheep and cattle stations may be gauged by reference to the area of pastoral leases issued by the Lands Department.

The passing of the Homesteads Act in 1893 and of a comprehensive Land Act in 1898 provided the basis for a rapid increase in the settlement of agricultural land. Under the Homesteads Act, any man over the age of 18 years who did not already own an area of 100 acres or more in this State could apply for a free homestead farm of 160 acres, on condition that he resided on his land during at least six months

LAND ALIENATED AND LAND HELD UNDER LEASE

Date	Area absolutely alienated	Area in process of alienation	Area of Leases or Licences in Force on Crown Land and Issued (‡) by—			
			Lands Department		Mines Department (*b*)	Forests Department (*c*)
			Pastoral Leases	Other Leases (*a*)		
At 30th June—	acres	acres	acres	acres	acres	acres
1900 (*d*)	3,462,490	3,156,798	86,429,037	10,654	84,470	851,820
1910	4,449,326	12,880,195	165,463,185	501,315	99,732	1,143,572
1920	8,763,051	14,259,769	253,436,312	2,454,204	97,387	1,612,068
1930	14,506,064	21,533,054	241,504,687	2,397,790	84,381	1,402,898
1940	18,244,428	14,192,666	204,950,557	2,008,124	93,709	2,327,371
1950	21,263,085	11,514,531	219,200,060	3,289,017	97,868	3,418,217
1953	23,634,215	12,226,597	(*e*) 198,938,434	3,822,192	105,470	3,571,736
1954	24,385,777	12,850,764	198,870,488	3,883,289	103,765	3,708,647
1955	24,708,930	13,116,652	200,789,422	3,992,209	101,083	3,757,433
1956	25,228,070	13,001,488	208,003,368	4,376,227	100,372	3,837,712
1957	25,726,950	12,837,282	208,396,798	4,434,105	97,402	3,882,488
1958	26,205,502	13,053,345	212,543,505	5,202,529	98,392	3,919,067
1959	26,810,081	12,907,720	217,655,338	5,820,659	92,948	4,031,140
1960	27,343,902	12,758,807	216,908,871	6,623,272	93,000	4,024,720
1961	27,786,699	12,829,828	220,782,073	6,919,781	91,874	4,011,966
1962	28,227,002	13,240,996	230,286,920	5,627,281	73,114	4,049,432

(‡) See letterpress preceding table. (*a*) Comprises special leases, leases of reserves, leases of residential lots and perpetual leases. (*b*) Comprises gold-mining leases, mineral leases and miners' homestead leases. (*c*) Predominantly sawmilling permits. Includes permits for cutting wandoo for tannin extraction but excludes permits and licences for cutting timber and firewood in Goldfields areas. (*d*) At 31st December. (*e*) Apparent decrease in area due mainly to revision in the records of the Lands Department.

of each of the first five years and carried out prescribed improvements. With a lower minimum age of 16 years, a similar provision is contained in the Land Act, 1933–1962, and this provision, operating in conjunction with the conditional purchase lease system, has also been a factor in the increase in land settlement, particularly in the wheat-growing areas.

About 1905 the Department of Lands and Surveys, by implementing a system of survey and subdivision before selection, partially checked the indiscriminate selection of land by inexperienced farmers. A further stabilizing influence on agricultural development was the introduction in 1909 of a system of grading Crown lands into classes, First, Second and Third according to suitability for farming.

The movement of population from the goldfields to the wheat belt contributed to the increase in the area of land in process of alienation from 3,156,798 acres in 1900 to 12,880,195 in 1910. The ultimate alienation of about one-third of this land by Crown grant is reflected in the greatly increased figures for " absolutely alienated " land in 1920. Settlement of the wheat belt developed rapidly during and after the period 1910 to 1920, in spite of serious droughts which occurred in 1911 and 1914. Although the increased totals at the 30th June, 1930 were principally due to this development, they resulted in part from the acquisition during the previous 10 years of farmland, mainly for dairying, in the south-west of the State under the Group Settlement Scheme. These holdings were individually much smaller than those in the wheat-growing districts, because of the type of farming and the heavy clearing costs, but the numbers involved made the total area taken up under the Scheme of some significance.

Pastoral leases, which comprise the greatest proportion of Crown land held under lease or licence, increased threefold between 1900 and 1920 and continue to cover approximately one-third of the whole State. The aggregate area of gold-mining leases, mineral leases and miners' homestead leases, appearing in the table under the heading of Mines Department, shows comparatively little variation since 1900. However, in recent years very large areas have been included in tenures issued under the provisions of the Petroleum Act, 1936–1954 and in temporary reserves under the Mining Act, 1904–1957. At the 30th June, 1962 there were current, under the Petroleum Act, permits to explore covering 401,481,600 acres and licences to prospect covering 5,212,102 acres. The area relating to permits appearing under the heading of Forests Department shows a general increase from less than one million acres in 1900 to more than four million acres in 1962.

From 1930 the demand for land for agricultural purposes declined considerably, the principal reason being the lower farm commodity prices which prevailed for several years prior to the second World War. After 1945, however, the demand for land again increased, stimulated by the sharp rise in export prices, notably of wheat and wool, and later by the War Service Land Settlement Scheme mentioned in the following section *Government Land Settlement Schemes*. The area conditionally alienated in any one year reached a post-war peak of 1,707,894 acres in 1953 but had declined to 718,133 acres in 1960 since when it has increased to 1,234,516 acres in 1962.

The following table gives details of areas of land for which applications were approved, during each of the years 1953 to 1962, by the Lands Department for conditional alienation or allocation under lease or licence. The figures shown for any year do not necessarily represent land allotted for the first time, as they may include land previously held under any of the several forms of land tenure.

CROWN LANDS—AREA OF ALLOCATIONS APPROVED BY LANDS DEPARTMENT (*a*)

Year	Conditional Alienation					Leases and Licences			
	Conditional Purchases	Selections under Part VIII of Land Act	Town and Suburban Lots	Miscellaneous (*b*)	Total	Pastoral Leases and Licences	Special Leases	Miscellaneous Leases (*c*)	Total
	acres	acres	acres	acres	acres	acres	acres	acres	acres
1953	1,675,075	13,808	923	18,088	1,707,894	2,292,734	71,731	12,272	2,376,737
1954	1,042,643	4,956	675	4,795	1,053,069	5,427,698	224,870	102,398	5,754,966
1955	798,547	11,672	857	240	811,316	8,431,745	139,827	41,707	8,613,279
1956	704,053	182	328	1,311	705,874	3,523,487	152,217	204,959	3,880,663
1957	932,686	727	507	6,319	940,239	5,218,047	346,254	224,328	5,788,629
1958	796,865	1,255	285	4,051	802,456	3,175,303	536,222	182,740	3,894,265
1959	976,440	2,179	631	1,266	980,516	10,246,253	1,037,882	276,816	11,560,951
1960	712,410	4,779	266	678	718,133	4,164,358	912,046	251,361	5,327,765
1961	1,017,800	729	381	1,380	1,020,290	6,488,872	131,968	158,062	6,778,902
1962	1,229,889	2,876	499	1,252	1,234,516	15,862,470	226,985	355,546	16,445,001

(*a*) See letterpress immediately preceding table. (*b*) Comprises Free Homestead Farms and Reserves. (*c*) Comprises perpetual leases, leases of reserves and leases of town and suburban lots.

GOVERNMENT LAND SETTLEMENT SCHEMES

Although, generally, the method of land alienation and settlement in the agricultural areas of Western Australia has been by independent applications by individual settlers for conditional purchase leases, there has also been a series of government land settlement schemes. The more important of these are the Soldiers' Settlement Scheme following the 1914–18 war, the Group Settlement Scheme introduced in 1921, the War Service Land Settlement Scheme which was initiated in 1945 and other lesser schemes for the settlement of civilians.

Soldiers' Settlement Scheme

The Soldiers' Settlement Scheme was introduced after the first World War and was financed partly by the United Kingdom Government, which arranged free passages for ex-service personnel and their families, and partly by the Commonwealth and State Governments of Australia. Under joint financial responsibility for the scheme the Commonwealth Government was to provide loan moneys to an average of £500 per settler as working capital for such essentials as initial improvements, implements and seed. Later this was increased to £625 and a further average loan of £375 towards the cost of land brought the Commonwealth commitment to £1,000 per settler. The State Agricultural Bank provided all extra funds for operations in Western Australia.

By 1940, when operations under the scheme virtually came to an end, 5,213 soldier settlers had been assisted in Western Australia and advances totalling £6,737,693 had been made. The ultimate cost of the scheme was greater than had been anticipated and the extension of settlement, which was one of its purposes, was frustrated to some degree by the war-caused disabilities of the settlers. Much of the land taken up eventually either reverted to the Crown or was acquired by other settlers.

Group Settlement Scheme

The Group Settlement Scheme was introduced in 1921, but its major development resulted from the passage of the Empire Settlement Act of 1922 by the British Parliament. The main purposes of the Act were to relieve the considerable degree of unemployment prevailing in Britain and to expand land settlement in the Dominions. Agreements were consequently negotiated between the Governments concerned and in the case of the Western Australian scheme it was agreed to establish 6,000 holdings in various " Groups " in the south-western portion of the State, with the farmers on each " Group " forming a loosely-knit community. The settlers were to be assisted British immigrants and dairying and pig raising were to be the main activities. As in the Soldiers' Settlement Scheme, the expenditure involved was shared by the British, Commonwealth and State Governments.

The scheme did not develop to the extent originally planned, the maximum number of holdings settled at any one time being 2,442. By amalgamation of properties and abandonments, this number became reduced to 1,700 and in 1942, just over twenty years after the scheme was launched, 530 of the holdings were unoccupied and available for resettlement while little more than one-quarter of the 500,000 acres initially taken up had been brought into production. Nevertheless, the scheme had an important influence on the settlement and development of several parts of the extreme south-western portion of the State.

War Service Land Settlement Scheme

The general purpose of the War Service Land Settlement Scheme has been to settle on the land ex-servicemen of the second World War, the Korean War and the Malayan operations. Every effort has been made to profit from the experience gained in previous land settlement schemes and to avoid the faults and deficiencies which were responsible for their very limited success.

In the early years of the scheme, certain privately-owned properties were acquired for resettlement, but subsequent policy has been to develop available areas of Crown land. Land chosen was closely examined as to accessibility, climate, types of soils, water supply, productive capacity and the possibilities of development, improvement and subdivision. In order to ensure, as far as possible, the success of each individual venture, care has been taken to assess the suitability of both the applicant and the land selected for the type of farming contemplated. Government policy has been to prepare the holdings by clearing, fencing and other improvements before allotment to applicants. These considerations, rather than the number of applicants wishing to obtain a holding, have determined the rate and extent of settlement.

In this State, expenditure of the funds of the scheme, which are provided by the Commonwealth Government, is administered by the Land Settlement Board under the direction of the Minister for Agriculture, and the State Government is responsible for Western Australia's share of any losses incurred. Settlers are required to invest in their holdings a proportion of their own financial or other resources. Guidance and technical advice are made available to settlers through the Department of Agriculture extension services.

Although holdings under the scheme were originally available only on perpetual lease, amending legislation passed in the State Parliament during 1954 continuing the relevant provisions of an earlier amendment of 1951, enabled War Service Land Settlement lessees to apply for a title in fee simple after occupying the land for not less than 10 years on a leasehold basis. By an amendment passed during 1960 freehold can now be obtained after such shorter period than 10 years as the Commonwealth and the State have determined or may determine where special circumstances exist.

The main developmental work, both in project areas and on repurchased estates, has been almost completed and War Service Land Settlement activities are now devoted mainly to valuation of the farms and financial assistance to the lessees. Up to the 30th June, 1962 a total of 1,272 ex-servicemen had been placed on farms.

Other Schemes of Settlement

The 3,500 Farms Scheme in Western Australia was one of the projects proposed to be undertaken under an agreement in 1925 between the British and Australian Governments, whereby £34 million was to be made available for joint developmental projects during the following 10 years. The Commonwealth Government set up a Development and Migration Commission to examine the suitability of any suggested projects. The Commission ultimately reported adversely on the 3,500 Farms Scheme and it was abandoned, but not before some expenditure had been incurred on the preparatory work of surveys and public works. In fact, the £34 million agreement itself lapsed before any significant results by way of additional farms had been achieved in Western Australia.

PUBLIC PARKS AND RESERVES

Reference has been made earlier in this Chapter in the section *Methods of Land Alienation* to land set aside by the Government for public purposes. Some of this land is reserved for public recreation and amusement, national and other public parks, or flora and fauna sanctuaries and the reserves are controlled by statutory bodies, the more important of which are dealt with in this section. Further reference to reserves will be found in the section *Conservation of the Flora* in Part 3 of Chapter II.

The National Parks Board of Western Australia controls a number of parks and reserves, comprising a total area of approximately 320,000 acres. Those in the neighbourhood of Perth are Crawley Reserve, Yanchep Park, the John Forrest National Park near Glen Forrest and reserves at Lesmurdie Falls, Serpentine Falls, Yanchep Beach and Penguin Island. In the southern part of the State are the Stirling Range and the Porongorups National Parks. The Nornalup National Park is on the south coast and the Hamelin Bay Reserve on the west coast near Cape Leeuwin. Recreation and camping facilities are provided in most of these areas. Flora and fauna are protected in all of them. The Board is also responsible for the upkeep of the East Perth Cemetery, a disused burial ground containing the graves of many of the early pioneers.

The Emu Point (Albany) Reserve Board controls a reserve containing an area of approximately 1,100 acres at Emu Point near Albany, which is being developed for recreation, camping and residential purposes.

The King's Park Board administers an area of almost 1,000 acres close to the centre of Perth. Most of the area is retained in a bushland state and has undergone no development other than the construction of motor drives and footpaths. The most scenic portion of the Park, on a bluff overlooking Perth City and the Swan River, has been landscaped and contains the State War Memorial and several other public monuments, and tree avenues planted in honour of fallen servicemen and also in commemoration of the State's Centenary in 1929. Other features include a restaurant, a floral clock and a wishing well. Plans have recently been made to establish a Botanic Garden of Western Australian native plants in the Park. The State Government has agreed to allocate for the purpose a sum of £166,500 to be spent over a five-year period commencing with the financial year 1962-63.

Zoological Gardens Board (Acclimatisation Committee)—An area of 44 acres at South Perth is under the control of the Acclimatisation Committee. Animals, birds and reptiles are exhibited in the Zoological Gardens and picnic, sporting and recreational facilities are available to the public.

The Rottnest Island Board administers as a tourist and holiday resort a reserve comprising almost the whole of Rottnest Island, which is situated about 10 miles west of Fremantle.

Caves Reserves—Extensive limestone caves have been discovered at several places in the south-west part of the State. Some of them, between Cape Naturaliste and Cape Leeuwin and at Yanchep, have been developed for public inspection and certain areas of the surrounding land have been reserved, notably at Yanchep, Yallingup, Margaret River and Augusta.

Local Government Reserves—Many local authorities hold land for recreational purposes, the areas having been either vested in them by the Crown, acquired by way of purchase or received under private bequest. The reserves are frequently developed as public parks or to provide facilities for sports or for camping.

The National Fitness Council controls reserves, principally for youth activities, at Point Peron on the coast south of Fremantle, at Sorrento to the north, at Bickley in the Darling Range and at Pemberton in the forest country of the South-West.

CHAPTER VII—*continued*

PART 2—WATER CONSERVATION AND SUPPLY

The principal water supply systems of Western Australia are under the control of two State Government authorities, both of which are administered by the Minister for Works and Water Supplies. The Metropolitan Water Supply, Sewerage, and Drainage Board(1) has as its territory an area centred on Perth and extending southward to Kwinana and Serpentine, northward to Sorrento and eastward to Greenmount. The Public Works Department controls the Goldfields and Agricultural Water Supply and the Great Southern Towns Water Supply as well as 77 local water supplies. It also provides water for irrigation purposes in the South-West Irrigation Districts. Five independent town schemes are controlled by local Water Boards in country areas and individual water supplies serve railways, timber mill towns, isolated mines, pastoral properties, stock routes and agricultural areas, mainly from dams, tanks, wells and bores. In addition, water from subterranean sources is used for irrigation purposes at Carnarvon, and from the Fitzroy River for rice growing at Camballin. Supplies from the Ord River are used on a pilot farm near Kununurra operated by a private company under an agreement with the State Government and for experimental work being carried out by the Department of Agriculture and the Commonwealth Scientific and Industrial Research Organization at the Kimberley Research Station. Water from this source is also being used on private farm holdings the first five of which were allocated in 1962.

The principal water storages in Western Australia are shown in the list below. Canning Dam, with minor storages at Churchman Brook Dam, Victoria Reservoir, and a diversion weir on Wungong Brook, and Serpentine Dam with Serpentine Pipehead Dam serve the metropolitan area and environs. Mundaring Weir, which is the source for the Goldfields and Agricultural Water Supply, is linked to Kalgoorlie by pipeline and serves the more populous parts of the Eastern Goldfields as well as certain towns and farming areas north and south of the main pipeline. As occasion arises Mundaring Weir supplies to or draws from the Metropolitan Water Supply. Stirling Dam, with a supplementary catchment at Harvey Weir, serves part of the irrigation area of the South-West. Drakes Brook Dam and Samson Brook Dam are also used for this purpose. Wellington Dam, on the Collie River, has now been enlarged to meet not only the needs of the southern parts of the irrigation area but also of those towns along the Great Southern Railway which are included in the Great Southern Towns Water Supply. Work has been completed on an earth dam on Logue Brook which will augment the supply of water to the Harvey Irrigation District.

The storage capacity of the several dams and reservoirs at the 31st December, 1962 was as shown below.

	million gallons
Canning Dam	20,550
Victoria Reservoir	189
Churchman Brook Dam	480
Wungong Brook Diversion Weir	(*a*)
Serpentine Dam	39,000
Serpentine Pipehead Dam	850
Mundaring Weir	16,966
Drakes Brook Dam	504
Samson Brook Dam	2,021
Logue Brook Dam (*b*)	5,230
Harvey Weir	2,275
Stirling Dam	12,552
Wellington Dam	40,790
Bandicoot Bar Dam (*b*) (*c*)	21,709
17-Mile Dam (*d*)	1,250
Fitzroy Dam	1,209

(*a*) Diversion weir only. (*b*) Under construction at 31st December, 1962. (*c*) Ord River diversion dam. (*d*) On Uralla Creek, an anabranch of the Fitzroy River.

(1) See *Appendix*.

METROPOLITAN WATER SUPPLY

The sources of the metropolitan water supply are Serpentine Dam and Serpentine Pipehead Dam, Canning Dam, Victoria Reservoir, Churchman Brook Dam and Wungong Brook Diversion Weir. The supply from these sources is supplemented as necessary from a pipeline link with Mundaring Weir and from a number of artesian bores. The amount of bore water used, however, is now low in proportion to total metropolitan consumption, being rarely more than 10 per cent. during a severe summer and usually considerably less.

Victoria Reservoir, which was completed in 1891 with a capacity of 189 million gallons, was the first of the existing water conservation projects to be completed in the Darling Range. In 1921 a 23-million gallon reservoir, which is no longer used for water supply, was constructed at Bickley Brook to replace a pipehead dam, and in 1928 one with a capacity of 480 million gallons was completed at Churchman Brook. During the same period pipehead dams were built across the upper course of the Canning River and its tributary, Wungong Brook, preliminary to the construction of Canning Dam, which was begun in 1933 and completed in 1940. Canning Dam, with an estimated catchment area of 302 square miles, has a storage capacity of 20,550 million gallons retained by a concrete wall 218 feet high and 1,534 feet long at the crest. Serpentine Pipehead Dam was completed in 1957 and Serpentine Dam, commenced in 1957, was completed in 1961. Serpentine Dam is constructed of rolled earth fill and the embankment rises 171 feet above the stream bed, the length at the crest being 1,390 feet. Its capacity, which is slightly less than that of Wellington Dam on the Collie River, is 39,000 million gallons and the area of the catchment is 245 square miles.

Water from storages in the Darling Range is conveyed to service reservoirs at Mount Yokine, Mount Eliza, Bold Park (completed in 1962), Thompson Lake, Mount Hawthorn, Richmond, Melville, Buckland Hill and Greenmount, which serve an area of approximately 1,270 square miles, including the whole of the metropolitan area. To meet the peak demand during the summer months, supplies from these sources are supplemented from a system of artesian bores which can provide a daily maximum of 13 million gallons. On the 31st December, 1962, the number of consumer services was 140,246. The following table shows the quantities of water which were drawn from the various sources during each of the five years ended 30th June, 1958 to 1962.

METROPOLITAN WATER SUPPLY—QUANTITIES OF WATER DRAWN (*a*)
(million gallons)

Source	1957–58	1958–59	1959–60	1960–61	1961–62
Canning Dam	10,226	10,418	4,085	7,016	7,247
Churchman Brook Dam	830	672	454	547	614
Victoria Reservoir	469	424	253	301	265
Wungong Brook Diversion Weir	1,403	1,228	1,246	1,661	1,825
Mundaring Weir	1,671	1,767	69	227	107
Serpentine Dam and Serpentine Pipehead Dam	1,365	2,314	4,296	6,892	7,381
Metropolitan Bores	1,572	1,483	2,093	1,629	1,297
Total	17,536	18,306	(*b*) 12,496	18,273	18,736

(*a*) Including supplies to railways and shipping. (*b*) Reduction due to unusually severe water restrictions. See letterpress *Water Supplies* on page 19.

COUNTRY WATER SUPPLIES

CONTROLLED BY PUBLIC WORKS DEPARTMENT

Comprehensive Water Supply Scheme

A proposal for a Comprehensive Water Supply Scheme was first submitted by the State Government to the Commonwealth in January, 1946 when applying for financial assistance in its construction. The initial plan was intended to supply water to towns and farms in the greater part of the mixed farming (cereal and sheep) areas of Western Australia as well as to increase the supply to the Eastern Goldfields, but because of its high estimated cost the project was greatly reduced in scope and a modified scheme, agreed to by both Governments, was adopted in October, 1947. Parliamentary approval of the scheme as amended was given by the Agricultural Areas, Great Southern Towns, and Goldfields Water Supply Act, 1947 (State), and Commonwealth financial aid was authorized by the Western Australia Grant (Water Supply) Act 1948 (Commonwealth) and later amendments. The extent of the scheme as originally proposed, and as modified, is shown on a map appearing in issues Nos. 1 and 2 of the *Official Year Book of Western Australia* and a description of the boundary of the modified scheme is contained in a schedule to the State Act.

The modified scheme has now been completed and up to the 30th June, 1962 total expenditure was £10,214,496, shared equally between the Governments of the State and the Commonwealth. A request made by the State Government in 1960 for financial assistance on the same basis to extend the scheme to the boundary as first proposed in 1946 was rejected by the Commonwealth Government and further development is now dependent on the availability of State funds, the policy being to restrict extensions to major towns within the original area, serving also farm lands adjacent to pipelines. A further request was made by the State Government in 1963 for Commonwealth assistance, amounting to £5,250,000 over a seven-year period and representing one-half of the estimated cost of proposed extensions to the scheme. The request is still under consideration by the Commonwealth Government.

The project in its present form consists of two main parts, a northern section, being an expansion of the Goldfields and Agricultural Water Supply, and a southern section which is known as the Great Southern Towns Water Supply.

Goldfields and Agricultural Water Supply

The original purpose of this undertaking, which was formerly known as the Goldfields Water Supply, was to supply water for the Coolgardie and the Kalgoorlie-Boulder areas. To provide conservation, the Helena River was dammed near Mundaring, and on completion of the reservoir in 1902 it had a capacity of 4,655 million gallons. Subsequently extensive branch reticulations to country towns and agricultural areas were made from several points along the 346-mile pipeline connecting Mundaring Weir with Kalgoorlie. Notable extensions linked Norseman, 103 miles south of the main pipeline, to the scheme and took water northward from a point west of Merredin to supplement local schemes at Waddouring-Barbalin-Knungajin. Other extensions north and south of the main pipeline were made to provide water for a number of towns and surrounding districts, including Toodyay, Goomalling, York, Beverley and Bullfinch. The increasing demand for water in the area served by the scheme made it necessary to augment supplies. This was achieved by raising the wall 32 feet to a height of 132 feet and when the work was completed in 1951 the enlarged capacity of the reservoir was 15,154 million gallons. The capacity has since been further increased to 16,966 million gallons by the installation of adjustable steel crest gates, four feet in height. The water storage now provided is expected to meet the expanding requirements of the districts along the pipeline as well as on the goldfields, and the capacity of the mains and pumping stations has been raised to ensure adequate distribution of the increased supplies. Several of the steam pumps have been replaced by electric installations.

The undertaking is now known as the Goldfields and Agricultural Water Supply, and serves the northern section of the Comprehensive Water Supply Scheme to provide reticulated water to many country towns and farming areas. A pipeline southward from Merredin to serve Bruce Rock, Narembeen and Kondinin and surrounding districts has been linked to an extension south-west from Doodlakine and taken westward to supply Corrigin. Areas north-west of Burracoppin are served by an extension northward from a point east of Merredin, and districts north of Kellerberrin by a pipeline connecting Kellerberrin to the Waddouring-Barbalin-Knungajin system already mentioned. Water is taken northward from Cunderdin through Minnivale to a terminal reservoir near Kokardine. Extensions westward, eastward and northward from this pipeline serve the towns of Dowerin, Wyalkatchem, Yelbeni, Koorda, Ballidu, Dalwallinu, and surrounding farm lands An extension to the town of Wongan Hills was completed in 1963.

At the 30th June, 1962 the Goldfields and Agricultural Water Supply was serving 82 towns and water was being reticulated to 4·2 million acres of mixed-farming lands. The total length of pipelines was 3,727 miles and the number of services was 24,400. Consumption, including supplies drawn from local schemes and from the Metropolitan Water Supply, was 2,889 million gallons during the year ended 30th June, 1962.

Great Southern Towns Water Supply

The Great Southern Towns Water Supply is the southern section of the Comprehensive Water Supply Scheme and serves towns on the Great Southern Railway from Brookton to Katanning. Water is drawn from Wellington Dam which also supplies the Collie River Irrigation District. Work on the raising of the wall of the Dam was completed in 1960 and, with a capacity of 40,790 million gallons, it is now the largest in the State. It is linked by 87 miles of main pipeline to Narrogin and, in addition to the pumping station at Wellington Dam, two stations are operated for the purposes of the Scheme, the first being 28 miles east of the Dam and the second at Narrogin. Pipelines extend from Narrogin 40 miles north to Brookton and 59 miles south to Katanning. An extension westward from Katanning serves the town of Kojonup

and an extension north-eastward from Narrogin to the town of Wickepin is now under construction. At the 30th June, 1962 the Great Southern Towns Water Supply was serving 18 towns, the total length of pipelines was 353 miles and the number of services was 6,641. Consumption during the year ended 30th June, 1962 was 530 million gallons.

Other Schemes

Seventy-seven local schemes supply water from stream flow, dams, tanks, wells and bores, mainly to country towns. Sixty-six of these schemes, as well as the Goldfields and Agricultural Water Supply and the Great Southern Towns Water Supply, are administered under the provisions of the Country Areas Water Supply Act, 1947–1960. The Minister also controls eleven minor undertakings.

OTHER COUNTRY WATER SUPPLIES

As well as the schemes controlled by the Public Works Department, there are five local Water Boards operating under the Water Boards Act, 1904–1954 which also draw supplies from stream flow, dams, tanks, wells and bores. In addition, some local authorities exercise powers under the Local Government Act, 1960–1962 to supply water within their boundaries. There are still, however, a large number of individual farms and pastoral stations which are not connected to public schemes and are therefore obliged to provide their own supplies. The Forests Department and sawmilling companies operate schemes to supply water to their mill towns.

Railways of the Commonwealth and State Governments make independent provision for supplies of water for their own purposes, although considerable additional quantities are consumed by the railways from other sources, such as those controlled by the Public Works Department and the Metropolitan Water Supply, Sewerage, and Drainage Board.(1)

SOUTH-WEST IRRIGATION SCHEMES

Irrigation schemes have been established by the State Government on the coastal plain south of Perth in the Waroona, Harvey and Collie River Irrigation Districts between Waroona and Dardanup, the water being channelled from dams in the adjacent Darling Range.

Specialist advice on irrigation farming methods is available through the Department of Agriculture and the properties are watered on a rotational plan, according to the " Zone ", or section of the District, within which the farms are situated. Two free waterings are given each season on all rated land. All other waterings are charged for and special waterings, out of rotation, are available at a higher fee.

Details of irrigation in each District in the years 1960–61 and 1961–62 are given in the following table.

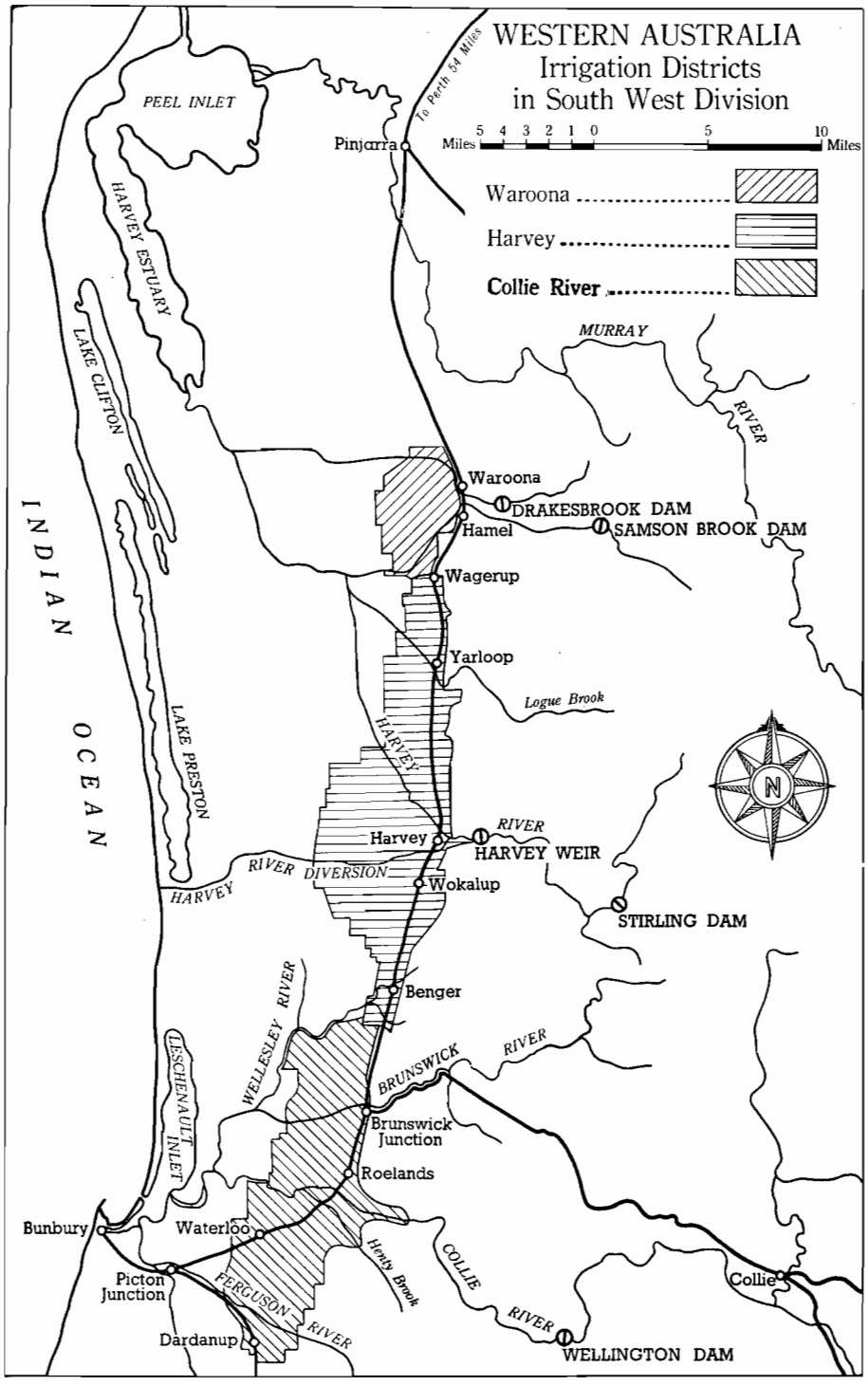
IRRIGATION

Particulars	Irrigation District						Total	
	Waroona		Harvey		Collie River			
	1960–61	1961–62	1960–61	1961–62	1960–61	1961–62	1960–61	1961–62
Area Watered—								
Pasture acres	2,424	2,547	8,638	10,850	9,024	10,160	20,086	23,557
Fodder Crops ,,	260	331	377	303	528	556	1,165	1,190
Potatoes ,,	132	78	22	56	541	463	695	597
Other Vegetables ,,	305	332	46	79	111	99	462	510
Orchards ,,			85	187	53	46	138	233
Other Crops ,,					57	34	57	34
Total ,,	3,121	3,288	9,168	11,475	10,314	11,358	22,603	26,121
Acre Waterings (*a*)	17,013	20,160	60,377	90,755	63,989	77,358	141,379	188,273
Average Number of Waterings	5·5	6·1	6·6	7·9	6·2	6·8	6·2	7·2
Total Water Gauged at Entry to District million gal.	2,394	3,013	10,671	12,904	11,002	12,823	24,067	28,740
Dam Capacity ,, ,,	2,525	2,525	14,827	14,827	40,790	40,790	58,142	58,142
Length of Channels miles	46	46	151	154	112	121	309	321

(*a*) Number of acres watered multiplied by average number of waterings.

The Harvey Irrigation District, opened in 1916, was the first large-scale project. Harvey Weir, with a capacity of 520 million gallons, was constructed as the source of water supply and the service initially provided was for 3,000 acres of land for citrus growing.

(1) See *Appendix*.


WESTERN AUSTRALIA
Irrigation Districts
in South West Division
Miles 5 4 3 2 1 0 5 10 Miles
Waroona
Harvey
Collie River
To Perth 54 Miles
PEEL INLET
HARVEY ESTUARY
LAKE CLIFTON
LAKE PRESTON
INDIAN OCEAN
Pinjarra
MURRAY RIVER
Waroona
DRAKESBROOK DAM
Hamel
SAMSON BROOK DAM
Wagerup
Yarloop
Logue Brook
HARVEY
Harvey
RIVER
HARVEY WEIR
RIVER DIVERSION
HARVEY
Wokalup
STIRLING DAM
Benger
WELLESLEY RIVER
LESCHENAULT INLET
BRUNSWICK RIVER
Brunswick Junction
Roelands
Bunbury
Waterloo
Henty Brook
COLLIE RIVER
Collie
Picton Junction
FERGUSON RIVER
Dardanup
WELLINGTON DAM
N

The success of dairying and stock raising and to a lesser extent vegetable growing, which have replaced citrus culture, has led to gradual but substantial extensions of the South-West irrigation area. The damming of Drakes Brook in 1931 and Samson Brook in 1941 provided a storage capacity of 2,281 million gallons which, by alterations to Samson Brook Dam in 1960, has been increased to 2,525 million gallons and is used for the irrigation of 3,417 rated acres in the Waroona Irrigation District. In 1931 the capacity of Harvey Weir was enlarged to 2,275 million gallons and in 1948 Stirling Dam, with an original capacity of 12,060 million gallons (increased to 12,552 million gallons by alterations in 1958), was completed further upstream on the Harvey River. These works enabled the Harvey Irrigation District to be extended northward to link with the Waroona District and the irrigable area of the former to be increased to 14,369 rated acres. Work on the damming of Logue Brook to augment supplies to the Harvey Irrigation District was completed late in 1963.

Concurrently with developments in the Harvey and Waroona Irrigation Districts, action was taken to conserve water for the Collie River Irrigation District and Wellington Dam on the Collie River was completed in 1933. In view of its importance, not only to irrigation projects but also to the Great Southern Towns Water Supply, the wall of this reservoir has been raised and when work was completed in 1960 its capacity of 8,000 million gallons had been increased to 40,790 million gallons. It serves an irrigable area of 9,269 rated acres in the Collie River Irrigation District, which extends from Brunswick Junction to Dardanup.

NORTHERN IRRIGATION SCHEMES

Although not yet comparable in size with the South-West undertakings, the irrigation areas at Carnarvon and on the Ord and Fitzroy Rivers in the northern portion of the State are of increasing significance.

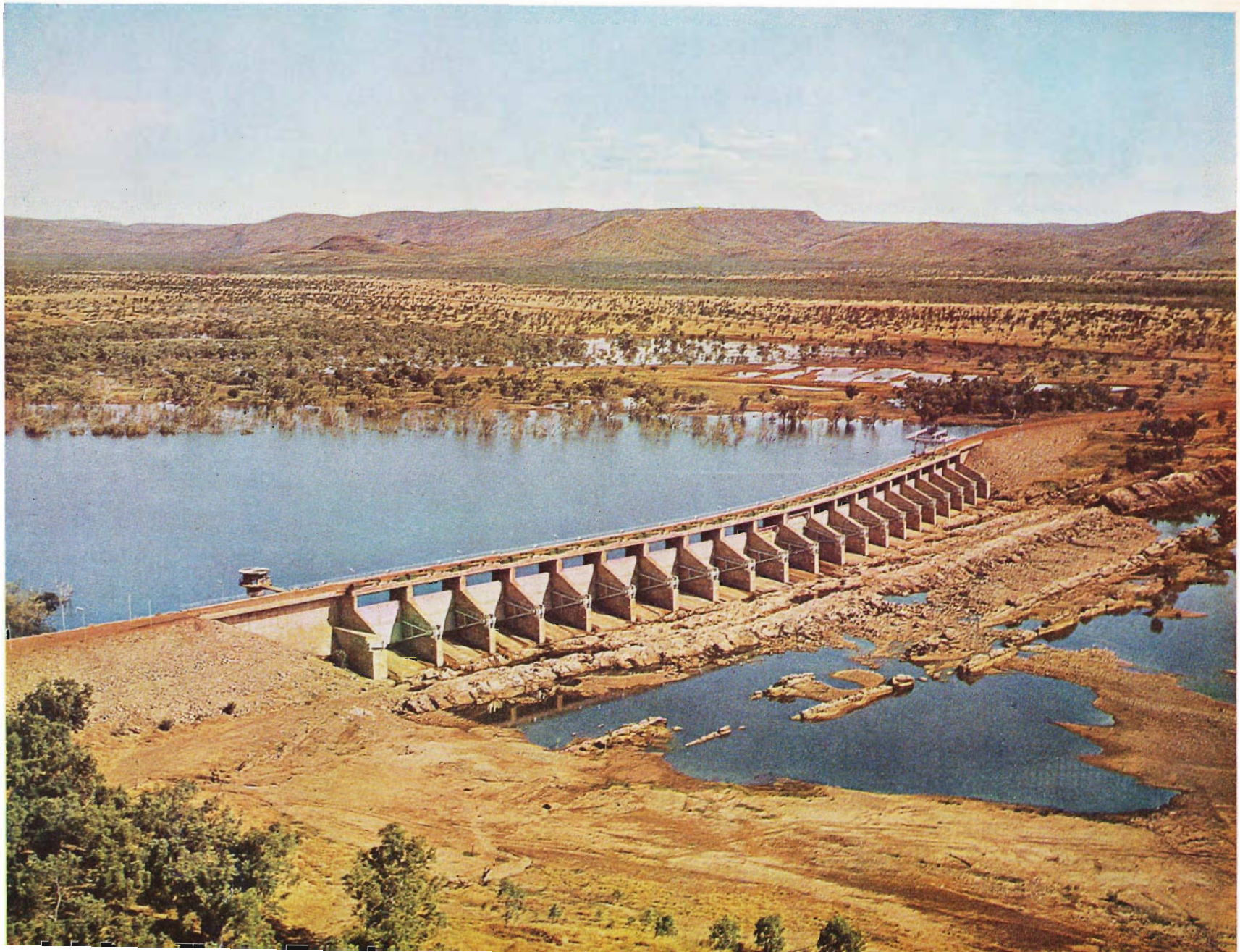
Carnarvon—During the past thirty years a centre of tropical agriculture has been developed at Carnarvon, near the mouth of the Gascoyne River. At first a number of tropical fruits were grown but, until recent years, production consisted mainly of bananas. A considerable quantity of early beans is now grown for the metropolitan market and for export interstate, and production of tomatoes and a variety of other vegetables has also increased in importance. This trend towards vegetable production has been accelerated by the damage caused to the banana plantations by cyclones and floods in recent years.

Agricultural development has been made possible only by irrigation, as the rainfall is extremely variable and averages little more than nine inches per annum. Each holding has its own irrigation plant and, wherever possible, the pumping unit is installed on a bank of the Gascoyne River. Usually the river bed is exposed, as surface flow does not occur regularly each year. Concrete-lined wells have been sunk into the river sands and the water obtained is pumped either to storage tanks or direct to the plantation feeder channels, from which it is distributed among the plants by furrows. Because of the limitations of supply from the river sands, the State Government has commenced to develop up-river sources and is delivering supplementary water by pipeline to twenty plantations on the south bank of the river at the eastern extremity of the Carnarvon Irrigation District. Some experiments have been carried out with overhead methods of irrigation, mainly at the tropical research station which is maintained at Carnarvon by the Department of Agriculture. To the early activities of this research station may be credited much of the success of the Carnarvon plantations, notably in the field of plant selection, and experimental work is being continued.

Ord River—The Ord River in the Kimberley Division traverses a tropical area served by monsoonal rains of irregular incidence and quantity, varying from an annual mean of 20 inches in the south to 30 inches in the north. The State Government has begun work on a plan to build a dam to conserve more than 3·5 million acre-feet (equivalent to more than 950,000 million gallons) of water for supply to an area of about 200,000 acres of land agriculturally and topographically suitable for irrigation. Investigations at the Kimberley Research Station, established in 1945 and operated by the Department of Agriculture in conjunction with the Commonwealth Scientific and Industrial Research Organization, have shown that the climate and soil conditions are favourable for the cultivation of sugar-cane, rice, cotton, safflower and various oil seeds. The economic production of these and other crops, as well as the possible use of such irrigation areas for fattening cattle, is now being examined also at a pilot farm on the Ord River operated by a private company under an agreement with the State Government. Details of this agreement are incorporated in the Northern Developments (Ord River) Pty. Ltd. Agreement Act, 1960.

The Ord River diversion dam at Bandicoot Bar, about 60 miles south-east of Wyndham and some 30 miles downstream from the main dam site, was officially opened on the 20th July, 1963. The diversion dam will provide water for thirty farms, the first five of which were allotted in 1962. The Commonwealth Government has accepted the Ord River diversion dam as an approved project within the meaning of the Western Australia Grant (Northern Development) Act 1958–1959.

Fitzroy River—On the Liveringa flood plain, rice is being produced in commercial quantities at Camballin, 65 miles south-east of Derby. Irrigation water from the Fitzroy River is diverted through Uralla Creek, an anabranch, for 25 miles to the rice-growing area where there is a natural storage of about 326 million gallons capacity. The supply of water to the irrigation area is augmented by pumping during periods of low flow in the Fitzroy River. Further storage with a capacity of 1,250 million gallons has been provided by the construction of a dam on Uralla Creek, 17 miles from the river. A weir has been constructed across the river to provide gravity flow to Uralla Creek during periods when the river is running. Later it will be necessary to construct a storage dam on the upper reaches of the Fitzroy River for the large-scale developments envisaged for this area.



ORD RIVER DIVERSION DAM

The official opening of the Ord River Diversion Dam on the 20th July, 1963 marked the completion of the first stage of the Ord River Irrigation Project. It has a storage capacity of 21,709 million gallons and provides water for the irrigation of farms currently producing cotton, safflower and rice. The Main Dam has a planned capacity of more than 950,000 million gallons and is designed to serve an area of about 200,000 acres of land agriculturally and topographically suitable for irrigation.

CHAPTER VIII – PRODUCTION

Although secondary industry in Western Australia has become increasingly important in recent years, the State's economy is still predominantly dependent on primary production and in particular on the pastoral, agricultural and mining sectors.

Farming has been carried on from the earliest years of settlement but its development was originally restricted by inadequate transport, shortage of labour and a limited local consumption. These difficulties were partly overcome by the introduction of convict labour during the period from 1850 to 1868, but the Colony was still dependent on the importation of many items of foodstuffs when the position was aggravated by a great influx of people attracted by the discovery of gold in the Kimberley in 1885 and by the spectacular finds in the 1890's at Coolgardie and Kalgoorlie and at other places on the eastern goldfields. Between 1890 and 1905 the population increased from 48,502 to 250,138 and, despite an increase in the area under crop from 69,700 acres to 364,700 acres during these years, agricultural production remained insufficient to meet local demands.

A decline in gold mining which began after 1903 caused a growing interest in farming as an alternative pursuit and by 1911 the area under crop had increased to more than one million acres, of which 612,000 were sown to wheat for grain. Since that time, although there have been some fluctuations in agricultural activity, the area under crop has risen to almost seven million acres of which more than four and a quarter million are sown to wheat for grain.

Circumstances similar to those applying to agriculture stimulated the growth of the pastoral industry and large cattle and sheep stations were established on land leased from the Crown, mainly in the northern and north-western areas and in parts of the eastern goldfields. The number of cattle in the State increased from 131,000 to 825,000 and of sheep from 2,525,000 to 5,159,000 between 1890 and 1910, when nearly three-fifths of the sheep were in the pastoral areas and little more than two-fifths in the agricultural areas as defined on page 266. With the development of mixed wheat and sheep farming the total number of sheep has risen and in 1962 was 18·3 million, but less than one-fifth are now in the pastoral areas and more than four-fifths in the agricultural areas. Although there has been notable progress in beef production in the south-west, the Kimberley Division continues to be the principal producer, having almost three-fifths of the 982,801 head of beef cattle in the State in 1962.

The contribution of gold mining to the Western Australian economy has diminished greatly since the peak production of 1903. It is nevertheless of considerable importance and is still the major mining activity, followed in order by the mining of coal, asbestos, iron, manganese, ilmenite and pyritic ore.

Dairying, with an annual milk production of about 58 million gallons, has become a significant factor in primary industry and in 1961–62 the output of butter was 16,847,122 lb. and of cheese 3,064,902 lb.

The demand for jarrah and karri hardwoods has long been a feature of the State's economy. Indiscriminate cutting in earlier years and disregard of the need for preservation and regeneration threatened the survival of the timber industry. However, governmental controls over forestry operations and a policy of reforestation introduced in 1918 have proved to be effective and the industry is now established on a firm basis, timber forming an important component of primary production.

The oversea demand for crayfish, which has developed in post-war years, has given great impetus to the fishing industry, the total value of the take of fish having increased more than twelvefold between 1947 and 1961–62. Interest in whaling was evident in the first years of colonization, exports of oil and whalebone being recorded in the earliest of the colonial Blue Books. Whaling activity since then has fluctuated widely and at times ceased altogether. The latest large-scale revival of the industry began in 1949 when a station at Point Cloates on the north-west coast was reopened after a lapse of more than twenty years.

Remoteness from the resources and markets of the more populous States has been an important factor in retarding manufacturing development, secondary industries being largely dependent on the limited local demand. In recent years the establishment of a major oil refinery and a steel-rolling mill, together with the dredging of a deep-water channel and the construction of harbour facilities to serve them, has introduced a new concept of the manufacturing potential of the State and future development may be more rapid than in the past.

The following table shows net values of production of the various primary industries and of secondary industry during the five years 1957–58 to 1961–62. An effective comparison of their relative importance is provided by the five-yearly averages also quoted as these minimize the effect of unusual seasonal or other conditions occurring in individual years.

NET VALUE OF RECORDED PRODUCTION

Industry	1957–58	1958–59	1959–60	1960–61	1961–62	Average of five years
			VALUE (£'000)			
Agriculture	27,338	42,747	44,044	46,708	51,326	42,433
Pastoral	36,947	30,581	39,659	39,978	41,329	37,699
Dairying	3,436	2,829	3,933	4,398	4,369	3,793
Poultry Farming	524	502	470	526	604	525
Bee Keeping	243	218	161	151	248	204
Trapping	60	47	101	240	186	127
Forestry	5,112	5,067	5,085	5,167	5,191	5,124
Fishing and Whaling	2,989	3,550	3,729	3,622	5,128	3,804
Mining and Quarrying	14,889	14,454	14,765	15,444	15,553	15,021
Total, Primary	91,538	99,995	111,947	116,234	123,934	108,730
Manufacturing	75,312	78,762	86,373	96,631	98,041	87,024
Total, Primary and Manufacturing	166,850	178,757	198,320	212,865	221,975	195,754
			PROPORTION OF TOTAL (PER CENT.)			
Agriculture	16·39	23·91	22·21	21·94	23·12	21·68
Pastoral	22·14	17·11	20·00	18·78	18·62	19·26
Dairying	2·06	1·58	1·98	2·07	1·97	1·94
Poultry Farming	0·31	0·28	0·24	0·25	0·27	0·27
Bee Keeping	0·15	0·12	0·08	0·07	0·11	0·10
Trapping	0·04	0·03	0·05	0·11	0·08	0·06
Forestry	3·06	2·83	2·56	2·43	2·34	2·62
Fishing and Whaling	1·79	1·99	1·88	1·70	2·31	1·94
Mining and Quarrying	8·92	8·09	7·45	7·25	7·01	7·67
Total, Primary	54·86	55·94	56·45	54·60	55·83	55·54
Manufacturing	45·14	44·06	43·55	45·40	44·17	44·46
Total, Primary and Manufacturing	100·00	100·00	100·00	100·00	100·00	100·00

The *Net Value* quoted in the above table represents the return to the producer, after deducting from the gross value the cost of all goods consumed in the process of production and costs of marketing the product. It is the sum available for payment of wages, interest, rent, depreciation, other overhead costs and for the producer's own income.

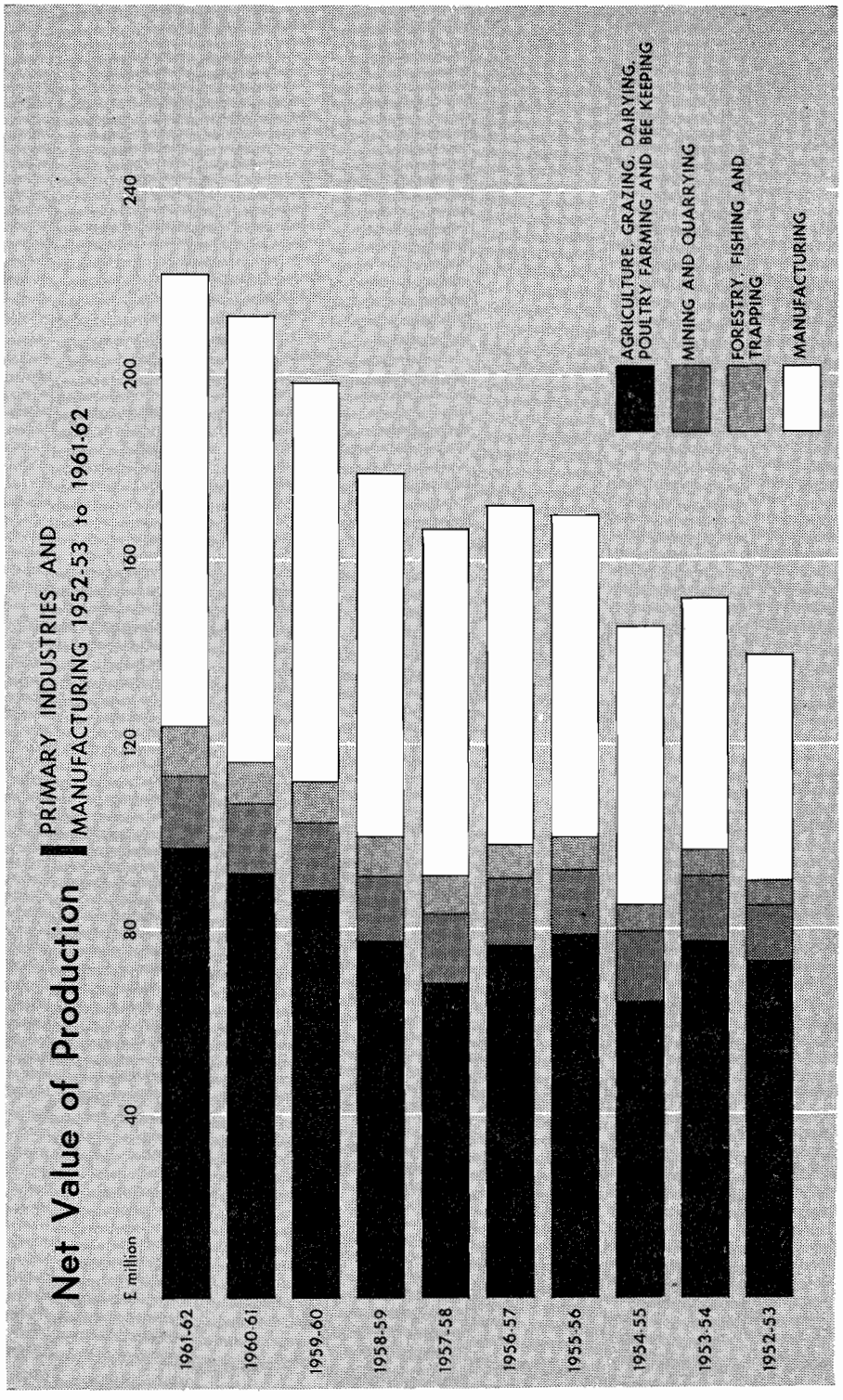
GEOGRAPHICAL DISTRIBUTION OF INDUSTRY

The following brief survey of production in the Statistical Divisions of the State should be read in conjunction with the map appearing at the back of the Year Book. Reference should also be made to the *Note on Statistical Divisions.*

The Metropolitan Division (192 square miles), with a population of 450,000 or almost three-fifths of the State total, is the principal centre of manufacturing activity and its industrial establishments, which employ 39,200 or almost three-quarters of the factory workers of the State, are responsible for more than three-fifths of the total net value of factory production. There are some small farms but their production is almost entirely confined to eggs, poultry and vegetables for consumption in the metropolitan area. A well-established fishing industry operates from the port of Fremantle, the main catch being crayfish.

The Swan Division (1,881 square miles) is becoming increasingly important in the manufacturing field and its industries, which include an oil refinery, a cement works, a steel-rolling mill, meat works and a large bacon factory, provide employment for 4,000 factory workers. An alumina refinery, using bauxite mined near Jarrahdale in the Darling Range, was brought into production at Kwinana late in 1963. Most of the State's viticultural production occurs in the area. It comprises table grapes for the local market and for export, dried currants, sultanas and raisins, and wine-making grapes for processing at local wineries and distilleries. Citrus and stone fruit, eggs, poultry, vegetables and whole milk are important products of the Division.

The South-West Division (11,025 square miles) is the main dairying area of the State and produces a large proportion of the total output of whole milk and of butter, cheese and condensery products. Pig raising is carried on as an ancillary activity to dairying and, in recent years, beef cattle have increased in importance. Apples, pears, stone fruits, potatoes and other vegetables are grown extensively.


Net Value of Production
PRIMARY INDUSTRIES AND MANUFACTURING 1952-53 to 1961-62
£ million
40
80
120
160
200
240
1961-62
1960-61
1959-60
1958-59
1957-58
1956-57
1955-56
1954-55
1953-54
1952-53
AGRICULTURE, GRAZING, DAIRYING, POULTRY FARMING AND BEE KEEPING
MINING AND QUARRYING
FORESTRY FISHING AND TRAPPING
MANUFACTURING

Flax is produced in the Shire of Upper Blackwood but in recent years the importance of flax growing has decreased considerably. Tobacco growing, formerly carried out in the Shire of Manjimup, has been discontinued following the collapse of the market for local leaf. Timber is a major product, being milled over a wide area, and coal and ilmenite are the principal minerals produced. Commercial fishing is centred on Mandurah, Bunbury and Busselton. The factories of the Division, which include sawmills, butter, cheese and milk-processing plants, a superphosphate works and a flax mill, employ about 4,500 workers. A large chemical factory at Bunbury began producing titanium oxide pigments late in 1963.

The Southern Agricultural, Central Agricultural and Northern Agricultural Divisions, which together cover 89,160 square miles, comprise the principal cereal-growing districts and produce the bulk of the State's wheat, oats and barley crops. The development of clover ley farming over a wide area since the war has led to a remarkable increase in the number of sheep carried on farms in these Divisions and the total, 14 million, is now almost 75 per cent. of the State's sheep population. There has been a corresponding rise in wool production which now represents 76 per cent. of the State's clip. The raising of beef cattle has also increased in importance and the number, 195,000, in these Divisions is now 18 per cent. of the State total. Tomatoes are grown around Geraldton and citrus fruits in the Chittering area. Dairying, apple and pear growing and potato cultivation are important in the districts around Denmark, Albany and Mount Barker. Whaling and fishing are carried on from Albany, on the south coast, and an important crayfishing industry based on the Abrolhos Islands, Geraldton, Dongara, Jurien Bay, Cervantes and Lancelin Island has been established on the west coast. The only mineral of importance is lead which is mined near Northampton. Factories, which include flour-mills, superphosphate works, butter factories, sawmills, a woollen mill, a charcoal iron and wood-distillation plant, a fish cannery and a meat works, provide employment for about 4,300 workers.

The North-West Division (75,732 square miles) has 1·17 million sheep, representing more than six per cent. of the State total, and over sixteen thousand beef cattle. Tropical agriculture has been developed on the Gascoyne River at Carnarvon where bananas and beans and other vegetables are grown. Whaling operations, formerly based on Carnarvon, have been discontinued and a prawn-fishing industry is being developed in the area. Commercial fishermen operate also from Shark Bay.

The Kimberley Division (162,363 square miles), with over half a million beef cattle, or 56 per cent. of the State total, and meat works at Wyndham, Derby, Broome and Glenroy, is the principal source of beef for export from Western Australia to oversea markets. Broome is also the centre of an important pearl-shell fishing industry and at Kuri Bay in Brecknock Harbour, 130 miles north-east of Derby, culture pearls are being successfully produced. Iron ore is mined at Cockatoo Island in Yampi Sound and developmental work is being carried out on deposits on adjacent Koolan Island. Reference is made on pages 239–40 to agricultural developments at Kununurra on the Ord River and Camballin on the Fitzroy River.

The Eastern Goldfields, Central and Pilbara Divisions covering a total area of 635,567 square miles contain the principal gold and mineral fields of the State and almost all the gold produced in Western Australia comes from this area. An important asbestos mining industry is established at Wittenoom and other minerals and ores produced elsewhere in these Divisions include beryl, felspar, gypsum, pyrites and ores of copper, iron, manganese, silver, tin and tanto-columbite. Although mining is the main industry, these Divisions contribute also to agricultural output, with an annual production of more than 2·5 million bushels of wheat, oats and barley. The area contains almost 14 per cent. of the sheep and more than seven per cent. of the beef cattle of the State.

PART 1—PRIMARY PRODUCTION

LAND UTILIZATION ON RURAL HOLDINGS

In 1961–62 there were 22,082 rural holdings in the State, comprising 252,783,283 acres of land or 40 per cent. of the total area of Western Australia.

The total area of rural holdings consisted of 26,261,204 acres of cleared land and 226,522,079 acres uncleared. Of the cleared land, 6,975,879 acres were used for crop, 8,181,566 acres were under established pastures, 888,906 acres were newly cleared during the season and 1,745,884 acres were in fallow. The balance of the cleared area, 8,468,969 acres, comprised land which was used for grazing or was resting during the season. The uncleared land is mainly pastoral leases held by sheep and cattle stations.

Land development in the post-war period has been stimulated by favourable prices for agricultural and pastoral commodities. Special concessions to primary producers under the provisions of the taxation legislation have also contributed to the increased capital investment in primary industry. This development, which has been undertaken principally by established farmers and by the War Service Land Settlement Board, has been aided by the introduction of modern mechanical methods of land clearing. As a result, the area of cleared land on rural holdings has risen from 14,621,424 acres in 1946–47 to 26,261,204 acres in 1961–62, an increase of 80 per cent. In the same period land used for crops has increased from 3,532,445 acres to 6,975,879 acres and the area under established pastures from 2,092,279 to 8,181,566 acres. Probably as a result of the increased practice of rotational ley farming as an alternative to fallowing, the area in fallow has decreased from 2,070,076 to 1,745,884 acres.

LAND UTILIZATION

Season	Cleared Land						Rural Holdings	
	Used for Crop (a)	Under Established Pasture	Newly Cleared, prepared for next Season	In Fallow	Used for Grazing or Resting	Total	Number	Area
	acres	acres	acres	acres	acres	acres		acres
1952–53	4,636,654	4,266,919	630,110	1,906,285	7,202,797	18,642,765	19,655	215,939,156
1953–54	4,477,102	4,527,188	730,291	1,912,794	8,132,113	19,779,488	20,132	221,805,578
1954–55	5,042,856	4,747,383	634,744	1,815,095	8,439,051	20,679,129	20,876	228,883,394
1955–56	5,233,501	5,384,321	743,565	1,711,361	8,391,593	21,464,341	21,323	229,734,380
1956–57	5,139,098	6,055,737	653,317	1,682,291	8,579,474	22,109,917	21,385	232,689,218
1957–58	5,510,867	6,425,664	616,412	1,459,894	8,806,806	22,819,643	21,593	236,666,717
1958–59	6,015,387	6,960,243	710,207	1,988,440	8,038,696	23,712,973	21,563	238,263,581
1959–60	6,382,121	7,358,662	726,382	1,921,417	8,232,097	24,620,679	21,832	244,618,596
1960–61	6,756,637	7,687,468	775,905	1,867,803	8,280,221	25,368,034	21,922	247,736,774
1961–62	6,975,879	8,181,566	888,906	1,745,884	8,468,969	26,261,204	22,082	252,783,283

(a) Excluding meadow hay.

LAND UTILIZATION IN EACH STATISTICAL DIVISION: 1961–62

Statistical Division	Cleared Land						Rural Holdings	
	Used for Crop (a)	Under Established Pasture	Newly Cleared, prepared for next Season	In Fallow	Used for Grazing or Resting	Total	Number	Area
	acres	acres	acres	acres	acres	acres		acres
Metropolitan	1,944	3,790	42	335	2,214	8,325	717	13,556
Swan	26,582	142,028	7,406	5,565	45,353	226,934	3,417	429,818
South-West	83,114	1,091,361	43,230	8,263	142,718	1,368,686	4,482	2,394,829
Southern Agricultural	1,068,339	2,654,529	227,553	224,621	1,252,423	5,427,465	4,068	8,100,691
Central Agricultural	3,417,794	2,552,228	267,806	700,036	3,796,212	10,734,076	5,081	14,255,353
Northern Agricultural	2,142,533	1,523,771	248,485	651,756	2,727,740	7,294,285	3,133	15,909,836
Eastern Goldfields	232,002	213,629	93,407	150,588	498,710	1,188,336	634	31,883,955
Central	262	12	143		1,482	1,899	153	61,193,887
North-West	1,216		38	120	609	1,983	238	40,959,312
Pilbara	2					2	60	23,716,962
Kimberley	2,091	218	796	4,600	1,508	9,213	99	53,925,084
Total	6,975,879	8,181,566	888,906	1,745,884	8,468,969	26,261,204	22,082	252,783,283

(a) Excluding meadow hay.

CLASSIFICATION OF RURAL HOLDINGS

Some of the information from the 1959–60 Agricultural and Pastoral Census was classified by size of principal characteristics (area of holdings, area of established pasture, area of selected crops and numbers of livestock). In addition all holdings were classified according to type of activity. Tables showing this information together with definitions and an outline of methods used have been published by the Commonwealth Bureau of Census and Statistics in a series of bulletins, *Classification of Rural Holdings by Size and Type of Activity*, 1959–60. Although similar information on size classification was published in a series of bulletins for the year 1955–56, type of activity classifications had not previously been undertaken uniformly throughout Australia.

Selected size classification tables for Western Australia are published elsewhere in this Chapter and the type of activity classifications for the State are shown on the next three pages. For definitions and a description of the methods used in classifying rural holdings by type of activity, reference should be made to the bulletins mentioned above.

HOLDINGS CLASSIFIED ACCORDING TO TYPE OF ACTIVITY—NUMBER AND AREA USED FOR VARIOUS PURPOSES: SEASON 1959–60

Type of Activity	Number of Holdings	Total Area of Holdings	Area Used for—				
			Fruit	Crops (excluding Fruit)	Fallow	Established Pasture	Balance of Holding
		acres	acres	acres	acres	acres	acres
Sheep—Cereal Grain	7,588	25,045,762	126	5,523,244	1,626,858	3,947,296	13,948,238
Sheep	2,703	150,699,290	1,598	270,377	54,177	1,946,368	148,426,770
Cereal Grain	690	1,910,795		376,445	146,085	57,115	1,331,150
Beef Cattle	604	56,109,416	270	12,753	3,795	254,113	55,838,485
Dairying	2,265	955,899	1,234	23,624	3,194	472,935	454,912
Vineyards	318	27,294	6,579	430	359	4,472	15,454
Fruit (Other than Vine)	943	197,344	14,341	3,645	1,502	72,140	105,716
Vegetables—Potatoes	329	75,470	419	6,465	1,187	27,173	40,226
Other and Mixed	953	40,005	981	6,995	1,331	4,383	26,315
Poultry	532	26,390	350	904	446	4,841	19,849
Pigs	124	252,685	22	3,002	1,338	4,623	243,700
Tobacco	151	15,468	79	1,624	264	4,319	9,182
Other	104	18,810	154	740	143	7,115	10,658
Multi-Purpose	533	778,068	2,423	86,610	20,038	227,527	441,470
Total, Classified Holdings	17,837	236,152,696	28,576	6,316,858	1,860,717	7,034,420	220,912,125
Unclassified Holdings—							
Sub-Commercial	3,434	1,975,150	3,901	18,905	18,222	108,449	1,825,673
Unused, Special, etc.	561	6,490,750	231	21,437	42,478	215,793	6,210,811
Total, All Rural Holdings	21,832	244,618,596	32,708	6,357,200	1,921,417	7,358,662	228,948,609

HOLDINGS WITH PIG HERDS, CLASSIFIED ACCORDING TO SIZE OF HERD AND TYPE OF ACTIVITY—SEASON 1959–60

Size of Pig Herd (numbers)	Type of Activity														Total Classified Holdings	Unclassified Holdings		All Holdings
	Sheep—Cereal Grain	Sheep	Cereal Grain	Beef Cattle	Dairying	Vineyards	Fruit (Other than Vine)	Potatoes	Other and Mixed Vegetables	Poultry	Pigs	Tobacco	Other	Multi-Purpose		Sub-Commercial	Unused, Special, etc.	
1– 4	277	78	17	7	161	1	28	25	16	2			1	30	643	81	2	726
5– 9	232	40	20	1	152	1	11	15	1	2				26	501	35	4	540
10– 14	221	40	12	5	115		2	8	1	4				10	418	28	3	449
15– 19	197	25	19	6	92		3	1	1	4				19	367	17	4	388
20– 29	320	49	22	3	135		6	4	3	8	5			26	581	19	10	610
30– 39	238	22	16	2	70		2	1		2	10			21	384	3	6	393
40– 49	174	22	14		41		1		1	3	15			16	287			287
50– 69	175	11	11	1	54			1	1	1	16			16	287		8	295
70– 99	99	10	7	1	22					1	19			31	190		4	194
100–199	57	5	5	1	11					1	35			34	149		10	159
200 and over	5	1	2		5						24			10	47		1	48
Total	1,995	303	145	27	858	2	53	55	24	28	124		1	239	3,854	183	52	4,089

HOLDINGS GROWING WHEAT FOR GRAIN, CLASSIFIED ACCORDING TO AREA AND TYPE OF ACTIVITY—SEASON 1959–60

Area of Wheat for Grain (acres)	Type of Activity														Total Classified Holdings	Unclassified Holdings		All Holdings
	Sheep—Cereal Grain	Sheep	Cereal Grain	Beef Cattle	Dairying	Vineyards	Fruit (Other than Vine)	Potatoes	Other and Mixed Vegetables	Poultry	Pigs	Tobacco	Other	Multi-Purpose		Sub-Commercial	Unused, Special, etc.	
1– 9	31	95	1	3	2		1		2	2	1		2	12	152	15		167
10– 19	43	83	2	1		1	3		1	2	1			13	150	18	1	169
20– 29	59	58	2								4			10	133	8	1	142
30– 49	119	71	10								5			18	223	20	4	247
50– 69	145	58	13		1						3			15	235	20		255
70– 99	185	41	18							1	1			15	261	2	2	265
100– 149	495	51	67							1	3			25	642	1		643
150– 199	438	13	48											9	508		3	511
200– 299	1,015	11	106	1							1			23	1,157		2	1,159
300– 399	1,118	2	89	1										18	1,228		1	1,229
400– 499	975	1	82											16	1,074			1,074
500– 699	1,356		113											3	1,472			1,472
700– 999	804		61											4	869			869
1,000–1,999	478		41											1	520		1	521
2,000 and over	49		5											1	55		2	57
Total	7,310	484	658	6	3	1	4		3	6	19		2	183	8,679	84	17	8,780

HOLDINGS WITH SHEEP FLOCKS, CLASSIFIED ACCORDING TO SIZE OF FLOCK AND TYPE OF ACTIVITY—SEASON 1959–60

Size of Sheep Flock (numbers)	Type of Activity														Total Classified Holdings	Unclassified Holdings		All Holdings
	Sheep—Cereal Grain	Sheep	Cereal Grain	Beef Cattle	Dairying	Vineyards	Fruit (Other than Vine)	Potatoes	Other and Mixed Vegetables	Poultry	Pigs	Tobacco	Other	Multi-Purpose		Sub-Commercial	Unused, Special, etc.	
1– 49	1	5	20	52	281	10	58	21	8	21	20	5	3	21	526	345	7	878
50– 99	4		26	31	77	7	31	4	5	3	7		2	24	221	147	4	372
100– 199	61	21	53	61	77	10	48	10	5	3	8	1		64	422	173	10	605
200– 299	104	111	50	21	38	4	29	7	2	2	2		2	61	433	39	6	478
300– 399	209	148	38	18	20		23	5	2		1		1	49	514		2	516
400– 499	354	162	32	13	7		19	1			2		1	45	636		3	639
500– 699	968	352	40	19	9		17	1			2		1	57	1,466		3	1,469
700– 999	1,709	434	23	15	2	1	12	1		2			1	56	2,256		8	2,264
1,000– 1,399	1,819	425	8	11	1		7						1	37	2,309		5	2,314
1,400– 1,999	1,339	308	3	7	1		2							36	1,696		3	1,699
2,000– 2,999	655	239	1	1			1							12	909		3	912
3,000– 4,999	249	191		3			1							8	452		2	454
5,000– 9,999	59	171												1	231		2	233
10,000–19,999	3	93													96			96
20,000–49,999	1	19													20			20
50,000 and over		1													1			1
Total	7,535	2,680	294	252	513	32	248	50	22	31	42	6	12	471	12,188	704	58	12,950

HOLDINGS WITH DAIRY CATTLE HERDS, CLASSIFIED ACCORDING TO SIZE OF HERD AND TYPE OF ACTIVITY—SEASON 1959–60

Size of Dairy Cattle Herd (numbers)	Type of Activity														Total Classified Holdings	Unclassified Holdings		All Holdings
	Sheep—Cereal Grain	Sheep	Cereal Grain	Beef Cattle	Dairying	Vineyards	Fruit (Other than Vine)	Potatoes	Other and Mixed Vegetables	Poultry	Pigs	Tobacco	Other	Multi-Purpose		Sub-Commercial	Unused, Special, etc.	
1– 4	2,337	715	79	72	6	35	180	35	47	88	29	36	9	113	3,781	566	4	4,351
5– 9	905	192	24	20	11	4	38	10	15	16	7	11		51	1,304	195	6	1,505
10– 14	186	75	4	9	28	2	16	13	5	2		3		32	375	93	3	471
15– 19	55	43		6	42		7	8	3	3	1	2		17	187	79	4	270
20– 29	28	38	2	7	189		34	27	4	3		2	1	32	367	52	7	426
30– 39	10	10	1	5	272	1	23	19	4	3				22	370	14	3	387
40– 49	1	6		4	353		7	11	2					18	402	8	2	412
50– 59	4	4		8	286		9	13	1					15	340	1	1	342
60– 69		3		4	251		5	8						13	284		3	287
70– 79		2		3	190		2	7						6	210		3	213
80– 89				1	132		1	3						7	144		1	145
90– 99	1	1		3	89			3						4	101		1	102
100–149		1		6	258		1	6						8	280		1	281
150–199				1	77									4	82		1	83
200 and over					76									5	81		2	83
Total	3,527	1,090	110	149	2,260	42	323	163	81	115	37	54	10	347	8,308	1,008	42	9,358

HOLDINGS WITH BEEF CATTLE HERDS, CLASSIFIED ACCORDING TO SIZE OF HERD AND TYPE OF ACTIVITY—SEASON 1959–60

Size of Beef Cattle Herd (numbers)	Type of Activity														Total Classified Holdings	Unclassified Holdings		All Holdings
	Sheep—Cereal Grain	Sheep	Cereal Grain	Beef Cattle	Dairying	Vineyards	Fruit (Other than Vine)	Potatoes	Other and Mixed Vegetables	Poultry	Pigs	Tobacco	Other	Multi-Purpose		Sub-Commercial	Unused, Special, etc.	
1– 9	977	321	18		315	7	79	24	13	18	9	19	3	65	1,868	316	10	2,194
10– 19	466	247	11		139	3	50	28	6	1	6	19	3	53	1,032	117	6	1,155
20– 29	242	199	5	10	90	4	30	9	7	2	1	6	2	46	653	69	4	726
30– 49	234	270	5	99	94	2	32	23	4	1	1	6	2	66	839	39	5	883
50– 69	114	132	1	77	46		18	13	1			2		36	440	3	5	448
70– 99	52	99	1	111	28		13	6	1			1	1	36	349	4	6	359
100– 149	32	76	2	70	19	2	6	3					2	34	246	2	1	249
150– 199	12	20		44	9		1	2						7	95	3	2	100
200– 299	11	22	1	53	4		3	3					1	8	106	1		107
300– 499	1	18		53	3									8	83		1	84
500– 999	1	10		22				1						2	36		2	38
1,000–1,999		9		9											18		3	21
2,000–4,999		1		17											18			18
5,000–9,999				21											21			21
10,000 and over				18											18			18
Total	2,142	1,424	44	604	747	18	232	112	32	22	17	53	14	361	5,822	554	45	6,421

EMPLOYMENT AND POPULATION

The permanent male work force on rural holdings in the State has increased only slightly during the past ten years. This has been due largely to the rapid development of power farming, which is indicated by the rise in the number of farm tractors from 18,313 in 1953 to 28,006 in 1962. The result has been that, in spite of greatly increased production, there has been little change in the permanent male work force which has increased from 30,283 in 1953 to 31,227 in 1962. Permanent male workers in 1962 consisted of 20,555 owners, lessees, tenants and share-farmers, 1,367 farmers' relatives who were not receiving wages and 9,305 paid employees. The number of males who were temporarily employed, including contractors and their employees, was 2,956. Full information is not available regarding casual or seasonal employment, as figures relate only to the 31st March in each year. When considering the details which appear in the following table, allowance should be made for this and for the fact that female employment is excluded because of the difficulty in separating domestic from farm activities.

Population on rural holdings at the 31st March, 1962, totalled 88,756 or 11·8 per cent. of the State population.

MALE EMPLOYMENT, POPULATION AND TRACTORS ON RURAL HOLDINGS

As at 31st March—	Males Working Permanently Full-time on Holdings				Temporary Employees including Contractors and their Employees	Population of Rural Holdings			Farm Tractors
	Owners, Lessees, Tenants and Share-farmers	Relatives not Receiving Wages	Employees, including Paid Relatives	Total		Males	Females	Total	
1953	20,398	2,043	7,842	30,283	4,232	(a)	(a)	(a)	18,313
1954	19,726	1,796	8,281	29,803	4,147	48,222	37,221	85,443	19,670
1955	20,000	1,605	7,978	29,583	4,101	48,636	37,599	86,235	21,166
1956	20,053	1,546	7,861	29,460	5,321	47,317	37,210	84,527	22,191
1957	20,084	1,512	8,702	30,298	4,467	47,545	37,881	85,426	22,908
1958	20,087	1,530	8,936	30,553	5,037	47,874	38,496	86,370	23,963
1959	19,974	1,530	8,852	30,356	4,424	47,228	38,364	85,592	24,985
1960	20,231	1,433	8,916	30,580	4,713	47,878	39,025	86,903	25,612
1961	20,474	1,468	8,991	30,933	3,848	48,600	39,595	88,195	27,164
1962	20,555	1,367	9,305	31,227	2,956	48,868	39,888	88,756	28,006

(a) Not available.

VALUE OF PRODUCTION

For primary production the *gross value* is based on the wholesale price realized " at the principal market." Where primary products are consumed at the place of production or where they become raw material for secondary industry within the State, these points of consumption are taken as the " principal market." *Net Value* represents the return to the producer after the cost of all goods consumed in the process of production and the costs of marketing the product have been deducted from the gross value. It is consequently the sum available for payment of wages, interest, rent, depreciation, other overhead costs and for the producer's own income.

The following table shows the net values of production of the various primary industries in 1961–62. The " *local value* " which is quoted is the value at the source of production and is obtained by deducting marketing costs, such as freight, cost of containers, commission and other handling charges, from the gross value.

PRIMARY INDUSTRIES—VALUE OF PRODUCTION: 1961-62

Industry	GROSS VALUE (based on Principal Market Prices)	Marketing Costs	LOCAL VALUE (as at source of Production)	Cost of Goods Consumed in Process of Production	NET VALUE
	£	£	£	£	£
Agriculture	74,382,648	9,525,586	64,857,062	13,531,581	51,325,481
Pastoral	52,654,856	4,035,303	48,619,553	7,291,093	41,328,460
Dairying	9,944,205	508,452	9,435,753	5,066,547	4,369,206
Poultry Farming	2,987,133	431,410	2,555,723	1,951,396	604,327
Bee Keeping	268,721	21,098	247,623	(a)	247,623
Trapping	255,568	69,313	186,255	(a)	186,255
Forestry	5,551,788	360,609	5,191,179	(a)	5,191,179
Fishing and Whaling	5,344,446	53,339	5,291,107	163,000	5,128,107
Mining and Quarrying	24,267,521	1,771,619	22,495,902	6,942,804	15,553,098
Total, Primary	175,656,886	16,776,729	158,880,157	34,946,421	123,933,736

(a) Not available.

Gross values of the principal items are shown in the next table for each of the years 1957–58 to 1961–62.

PRIMARY PRODUCTION—GROSS VALUES OF PRINCIPAL ITEMS

Industry and Commodity	1957–58	1958–59	1959–60	1960–61	1961–62
Agriculture—	£'000	£'000	£'000	£'000	£'000
Wheat	22,956	38,820	41,181	46,145	50,012
Oats	6,137	8,028	7,965	6,875	7,525
Barley	1,879	2,781	3,380	3,465	3,415
Hay	3,733	4,424	3,877	3,607	3,756
Pasture Seed (*a*)	315	281	365	274	476
Tobacco	527	572	453	167	
Vegetables	3,279	3,596	3,910	4,262	4,548
Fruit, Orchard (*b*)	3,720	3,851	3,291	4,057	3,493
Vine Fruits	672	481	559	616	615
Nursery Products (*c*)	322	352	389	385	379
Pastoral—					
Wool (Shorn and Dead) (*d*)	37,383	29,338	37,193	36,402	39,254
Livestock Slaughtered (*e*)	9,660	11,460	12,907	14,124	13,401
Dairying—					
Whole Milk (*f*)	6,341	6,101	6,724	7,121	7,071
Livestock Slaughtered (*g*)	2,701	2,589	2,875	2,852	2,873
Poultry Farming—					
Eggs (*h*)	1,597	1,614	* 1,535	1,565	1,701
Poultry	351	359	489	702	710
Bee Keeping	264	(*i*) 237	(*i*) 175	(*i*) 165	(*i*) 269
Trapping	88	63	144	289	256
Forestry	5,523	5,451	5,460	5,541	5,552
Fishing—					
Crayfish	1,721	2,299	3,013	3,003	4,093
Other Fish (*j*)	658	699	650	656	704
Pearls and Pearl-shell (*k*)	615	369	294	277	160
Mining and Quarrying—					
Gold (*l*)	13,817	14,298	14,106	14,292	14,274
Asbestos	1,238	1,343	1,629	1,420	1,535
Coal	2,553	2,281	2,357	2,439	1,680
Copper Ore (*m*)	60	56	234	200	322
Ilmenite Concentrates	412	358	346	458	735
Iron Ore	429	591	756	972	1,384
Manganese Ore	1,162	694	1,056	740	1,071
Pyritic Ore and Concentrates	383	352	372	367	428
Quarry Products	1,275	1,223	1,594	1,814	1,924

(*a*) Comprises clover, lupins, wimmera ryegrass and other pasture seeds. (*b*) Includes plantation and berry fruits. (*c*) Value of seedlings, cut flowers, bulbs, trees, etc. produced. (*d*) The value of fellmongered wool and wool exported on skins is included in the value of livestock slaughtered which has been computed from prices of livestock "on hoof" and therefore includes a value for wool on skins. (*e*) Comprises cattle, sheep and lambs. (*f*) Includes Commonwealth Government subsidy. (*g*) Comprises calves and pigs. (*h*) Excludes value of non-commercial production. (*i*) Excludes value of production of bee keepers with less than five hives. (*j*) Includes crabs, prawns, oysters, etc. (*k*) Excludes culture pearls. (*l*) Includes net subsidy payments by the Commonwealth Government and amounts distributed by the Gold Producers' Association Ltd. from premiums on sales of Western Australian gold. (*m*) Excludes cupreous ore for fertilizer. * Revised.

It should be noted that both gross values and local values of primary production involve some duplication as they include the products of certain primary industries which are consumed as raw materials by other industries in the group, for example grain and hay consumed by livestock. Furthermore, many of the materials consumed by primary industries are the products of secondary industry, for example artificial fertilizers. However, duplication has been eliminated in calculating net values of primary production by deducting the value of both primary and secondary products consumed by primary industries. Therefore net value of primary production should be used when comparing or combining values for primary industries with those for secondary industry. Gross values do, however, provide a reliable measure of the value of production of any particular item or industry.

SEASONAL CALENDAR

The following calendar is intended to show the main periods when principal agricultural and pastoral activities are carried out in Western Australia. Operations are generally confined to the periods shown but are subject to variation according to such factors as geographical location within the State, the variety of seed sown (or trees and vines planted) and exceptional seasonal conditions.

SEASONAL CALENDAR

Crop	Period	
	Sowing or Planting	Harvesting
Grain—		
Wheat	May to June	November to January
Oats	April to June	November to December
Barley	April to June	November to December
Rye	April to June	November to December
Hay—		
Wheaten	May to June	October to November
Oaten	April to June	October to November
Tobacco	October to November	January to March
Flax	May to June	November to December
Potatoes—		
Winter Planting :		
Metropolitan, Swan and South-West	June to September	October to January
Summer Planting :		
Southern Agricultural	October to December	February to April
South-West	December to February	April to May
Onions	June to August	December to March
Tomatoes—		
Geraldton Area	February to April	May to November
Other Areas	June to December	October to May
Fruit—		
Apples	June to August	February to May
Apricots	July	December to January
Bananas	September	September to May
Lemons	July to August	July to June
Nectarines	July	January to February
Oranges, Navel	July to August	May to September
„ Valencia	July to August	August to February
Peaches	July	December to February
Pears	June to July	January to March
Plums	June to July	December to March
Grapes—		
For Table Use	June to July	January to March
For Wine Making	June to July	February to March
For Drying	June to July	February to March
Shearing and Lambing—		
Shearing :		
Pastoral Areas	March to August	
Agricultural Areas	July to November	
Lambing :		
Whole State	April to July	

BUSHEL WEIGHTS

The production of cereals, fruit and certain other commodities is generally recorded in bushels. While the weight of a bushel varies according to the nature of the product, it is also subject to considerable variation on account of such factors as method of packing and size and variety within each kind of product. The average bushel equivalent weights set out below may be used to convert production to pounds weight avoirdupois.

Product	Weight per bushel	Product	Weight per bushel	Product	Weight per bushel
	lb.		lb.		lb.
Apples	42	Lemons	48	Peaches	45
Apricots	48	Loquats	45	Pears	45
Bananas	56	Maize	56	Peas, Field	60
Barley	50	Mandarins	48	Plums	58
Cherries	48	Nectarines	50	Quinces	42
Figs	44	Oats	40	Rye	60
Flax seed (pure seed)	56	Oranges	48	Tomatoes	44
Grapefruit	42	Passion Fruit	34	Wheat	60

AGRICULTURE

Wheat

Although wheat has been grown from the earliest years of settlement, cultivation was confined to limited areas as late as 1890 when, of a total area of 33,820 acres, about one-third was located in the Toodyay-Northam area of the Avon Valley, about one-quarter in the Geraldton-Greenough district and a similar area in the York-Beverley region, with lesser areas at Williams and at places in what is now the South-West Statistical Division. During the 1890's, however, substantial development took place as a result of extensions to the Great Southern and Eastern Railways and the completion of the line from Midland Junction to Walkaway, and by 1910 wheat farming was being carried out in widespread areas in the southern part of the State and as far east as the Merredin district, an area with an average annual rainfall of only 13 inches. An outstanding factor in this development was the introduction and increasing use of phosphate fertilizer (superphosphate) to correct the widespread phosphorus deficiency of the wheat belt soils of Western Australia.

The decline in gold production which began in 1904 reduced employment in mining and caused people in increasing numbers to take up agricultural land. This contributed to a spectacular growth in wheat farming and 1,734,117 acres were sown to wheat for grain in 1915 compared with 195,071 acres ten years earlier. The first World War caused a serious reduction in acreage but recovery was fairly rapid from 1920, and by 1925 the area sown for grain had risen to more than two million acres.

Following the war, a policy of expanding land settlement was resumed. A soldiers' settlement scheme was initiated and a large-scale programme of assisted immigration, with financial aid provided by the British, Commonwealth and State Governments, was inaugurated. With adequate finance available, greater technical efficiency and a buoyant market for wheat, the area sown for grain increased threefold between 1920 and 1930. Among the technical advances contributing to the increase were the introduction of tractors and the development by the Department of Agriculture of early-maturing and drought and disease resistant wheat varieties.

Because of the relatively low yield per acre, mechanization was of great significance in the growth of wheat farming in Western Australia, but other aspects of the industry received early consideration and experimental farms were established by the Department of Agriculture in areas where particular difficulties were encountered. As a result, special wheat strains have been developed and farming techniques improved. An extensive programme of soil research and classification has been carried out by the Department and has revealed several mineral deficiencies which it has been possible to correct by the addition of trace elements, notably copper and zinc, to standard fertilizers. Experiments have also been made on methods of soil conservation in those areas which are subject to wind or water erosion, and some success has been achieved by the planting of certain grasses and fodder crops and by contour ploughing and the use of contour banks.

In 1930, an area of 3,955,763 acres was sown for grain and produced a previously unsurpassed total harvest of 53,504,149 bushels, which was not exceeded until 1958. Low prices subsequently caused a decline in acreage to 2,540,696 acres in 1935, but by 1938 the total had risen to 3,412,818 for a yield of 36,843,600 bushels. The sowing of wheat for grain was reduced during the second World War to one-half of the pre-war level, only 1,515,800 acres being sown in 1944. In the immediate post-war years it steadily increased and by 1950 had again risen above three million acres. Over the next six years it declined slightly, the smallest area sown in that period being 2,764,486 acres in 1956. Significant increases occurred in each of the following three years and in 1959 the area sown was 3,718,596 acres. Except in 1946, when the average yield per acre was only 9·8 bushels, seasonal conditions in the post-war years have generally been favourable and good yields have been maintained. In 1955 a record average yield of 18·4 bushels was obtained from 2,889,585 acres, the total production being 53,250,000 bushels or only a quarter of a million bushels less than the 1930 harvest which was produced from an area one million acres greater in extent. In 1956 and 1957, when seasonal conditions were less favourable than in 1955, average yields were 11·6 and 11·2 bushels per acre and only 32·1 and 33·1 million bushels were harvested. The area sown increased in each season from 1958 to 1962 and, although average yields were not higher than the record of 1955, total production for each season exceeded the 1930 harvest which was the previous highest. In 1962, 72·5 million bushels were harvested from 4·8 million acres.

Most of Western Australia's wheat production is exported as grain and flour and in the following table the fluctuations which have occurred in exports since 1910 are shown, together with figures giving the estimated total wheat equivalent. In recent years the United Kingdom has been the most consistent

purchaser of the State's wheat but in 1961–62 the Republic of China (Mainland), which purchased 23·5 million bushels or 32 per cent. of total exports, was the State's most important customer. In that year other principal buyers, in order of importance, were Japan, the United Kingdom, India, Spain, the Federal Republic of Germany and Hong Kong. In the same year principal customers for flour were Ceylon, the Arabian States, Singapore, Malaya and Aden. Fuller details of exports appear in Chapter IX, Part 1.

The rapid increase in the production and export of wheat between 1910 and 1920 caused problems of transport and storage, and proposals for the bulk handling of the grain led to the formation of a company for this purpose in 1920. This original undertaking was wound up before commencing operations because the technical difficulties then appeared too great and the saving in handling costs problematical. In 1930, however, the project was revived and a cheaper method was tested with storage bins at five railway sidings in the Wyalkatchem area during the 1931–32 season. The experiment was successful and all wheat produced in Western Australia for marketing is now handled in bulk.

EXPORTS OF WHEAT AND FLOUR

Year	Wheat	Flour (*a*)	Estimated Total Wheat Equivalent
	bushels	tons (*b*)	bushels
1910	2,014,552	3,082	2,159,406
1919–20	9,151,125	129,491	15,237,202
1929–30	24,953,238	69,274	28,209,116
1939–40	15,330,423	91,843	19,647,044
1949–50	21,510,390	116,199	26,971,743
1952–53	23,318,935	176,630	31,620,545
1953–54	6,800,140	148,467	13,778,089
1954–55	19,334,742	120,711	25,008,159
1955–56	22,773,235	130,519	28,907,628
1956–57	46,796,467	127,712	52,798,931
1957–58	26,643,941	111,946	31,905,403
1958–59	23,503,275	104,754	28,426,713
1959–60	36,713,316	87,789	40,839,399
1960–61	52,480,005	135,375	58,842,630
1961–62	73,882,791	97,951	78,486,488

(*a*) Ships' stores are excluded from figures for 1959-60 and subsequent years. (*b*) Short ton = 2,000 lb.

The Australian Wheat Board is the sole authority for the marketing of wheat within Australia and of wheat and flour for export. It derives its authority from the provisions of the Wheat Stabilization Plan 1963–64 to 1967–68, established under joint Commonwealth and State legislation to replace similar legislation which expired after the marketing of the 1962–63 crop. The principal object of the Plan is to ensure that, in the event of falling prices, growers receive a return for their wheat at least equal to the cost of production, and for this purpose a fund is established by levying a tax on exports for which a price in excess of the cost of production is received. Should the price obtained fall below that cost it is provided that the difference shall be paid from the fund or, if that source is exhausted, by the Commonwealth Government. A further provision with a stabilizing effect on the industry fixes the price at which wheat for home consumption may be sold and again provides that this must not be less than the cost of production.

In 1957 the Commonwealth Parliament passed the Wheat Tax Act providing for a levy of ¼d. per bushel on wheat delivered to the Australian Wheat Board. This money, contributed by the growers, is spent by the Wheat Industry Research Council and State Wheat Research Committees set up under the provisions of the Wheat Research Act 1957. The Commonwealth Government has undertaken to supply additional funds, with a maximum of £1 for every £1 of growers' contributions and, in addition, the amount available for research work has been increased by £284,000 made available, under the provisions of the Wheat Acquisition (Undistributed Moneys) Act 1958, from funds held by the Australian Wheat Board.

Wool and Wheat — Annual Production, 1901 to 1961-62
WOOL
(comprising shorn, dead and
fellmongered wool)
million lb
160
120
80
40
1905
1910
1915
1920
1925
1930
1935
1940
1945
1950-51
1955-56
1960-61
WHEAT
million bushels
60
40
20
1910-11
1915-16
1920-21
1925-26
1930-31
1935-36
1940-41
1945-46
1950-51
1955-56
1960-61

The following table gives details of areas sown and wheat produced since 1900.

WHEAT FOR GRAIN—AREA AND PRODUCTION

Season	Area Sown	Production		
		Total	Average Yield per acre	Gross Value
	acres	bushels	bushels	£
1900–01	74,308	774,653	10.4	154,931
1905–06	195,071	2,308,305	11.8	425,594
1910–11	581,862	5,897,540	10.1	1,081,216
1915–16	1,734,117	18,236,355	10.5	3,267,347
1920–21	1,275,675	12,248,080	9.6	5,511,636
1925–26	2,112,032	20,471,177	9.7	6,418,567
1930–31	3,955,763	53,504,149	13.5	6,100,588
1935–36	2,540,696	23,315,417	9.2	4,873,641
1940–41	2,625,401	21,060,000	8.0	4,323,953
1945–46	1,835,780	20,929,000	11.4	7,935,371
1950–51	3,185,389	49,900,000	15.7	32,664,123
1952–53	2,999,475	35,458,000	11.8	27,596,965
1953–54	2,885,114	39,700,000	13.8	27,711,647
1954–55	2,979,151	34,300,000	11.5	21,827,313
1955–56	2,889,585	53,250,000	18.4	34,419,861
1956–57	2,764,486	32,100,000	11.6	22,027,312
1957–58	2,957,206	33,100,000	11.2	22,956,217
1958–59	3,291,858	57,650,000	17·5	38,819,613
1959–60	3,718,596	58,670,000	15·8	41,180,693
1960–61	4,021,225	63,900,000	15·9	46,145,119
1961–62	4,379,751	65,700,000	15·0	50,011,531

The principal varieties of wheat sown in each of the seasons 1957–58 to 1961–62 are shown in the following table.

AREAS SOWN TO INDIVIDUAL VARIETIES OF WHEAT

Variety	1957–58		1958–59		1959–60		1960–61		1961–62	
	Area	Per cent. of Total	Area	Per cent. of Total	Area	Per cent. of Total	Area	Per cent. of Total	Area	Per cent. of Total
	acres	%	acres	%	acres	%	acres	%	acres	%
Bencubbin	395,842	12·97	362,064	10·80	336,548	8·87	270,376	6·63	251,834	5·68
Bencubbin 48	116,732	3·83	134,571	4·01	128,723	3·39	90,033	2·21	73,694	1·66
Bungulla	512,154	16·78	525,440	15·67	496,933	13·09	470,299	11·54	467,108	10·54
Dirk	7,045	0·23	9,533	0·28	14,781	0·39	23,829	0·58	22,117	0·50
Eureka II	93,786	3·07	88,100	2·63	91,345	2·41	93,886	2·30	95,410	2·15
Gabo	894,219	29·31	1,132,856	33·79	1,371,969	36·15	1,538,743	37·74	1,654,838	37·33
Gluclub	37,996	1·25	31,065	0·93	32,570	0·86	35,301	0·87	33,274	0·75
Insignia	295,923	9·70	311,656	9·30	461,001	12·15	622,610	15·27	717,770	16·19
Insignia 49	10,942	0·36	83,961	2·50	189,316	4·99	328,550	8·06	497,206	11·21
Koorda	27,607	0·90	25,072	0·75	24,144	0·64	20,008	0·49	17,507	0·39
Kondut	248,455	8·14	217,672	6·49	216,512	5·71	165,438	4·06	144,835	3·27
Olympic	4		328	0·01	5,214	0·14	16,991	0·42	25,563	0·58
Pinnacle	3,858	0·13	3,458	0·10	7,738	0·20	12,321	0·30	18,937	0·43
Regalia	15,173	0·50	13,009	0·39	14,908	0·39	11,573	0·28	11,621	0·26
Wongoondy	279,165	9·15	292,231	8·72	279,693	7·37	273,907	6·72	305,981	6·90
Other Varieties	112,403	3·68	121,887	3·63	123,285	3·25	103,439	2·53	95,849	2·16
Total	3,051,304	100·00	3,352,903	100·00	3,794,680	100·00	4,077,304	100·00	4,433,544	100·00

In the following tables, holdings growing wheat for grain in 1959–60, in size groups of the acreage sown, are classified according to the size of the holding and the size of the sheep flock on the holding. Of the 21,832 rural holdings of all types in the State, wheat for grain was grown on 8,780. Holdings of between 1,000 and 5,000 acres accounted for 78 per cent. of this number and holdings which sowed between 200 and 1,000 acres represented 66 per cent. Of the holdings growing wheat for grain all but 502 carried sheep and 70 per cent. had flocks of between 500 and 2,000 sheep.

HOLDINGS GROWING WHEAT FOR GRAIN, CLASSIFIED ACCORDING TO ACREAGE SOWN AND SIZE OF HOLDING—SEASON 1959–60

Size of Holding (acres)	Area of Wheat for Grain (acres)															Total All Rural Holdings	
	Under 10	10–19	20–29	30–49	50–69	70–99	100–149	150–199	200–299	300–399	400–499	500–699	700–999	1,000–1,999	2,000 and over	Total	
1– 49	12	4	2	1												19	4,319
50– 99	2	5	1		1											9	682
100– 149	1	6	4	2	2	1										16	721
150– 199	3	1	1	5	3		1	1								15	668
200– 299	1	7	5	5	5	3	4	1	2							33	1,112
300– 399	6	2	4	4	4	2	8	1	4							35	838
400– 499	5	1		8	5	3	15	2	3							42	623
500– 599	3	5	4	8	3	6	11	6	6	3						55	509
600– 699	5	7	4	7	9	7	13	9	7	3	1					72	410
700– 799	4	4	5	9	8	6	17	12	11	5	2					83	335
800– 899	9	8	3	11	16	8	28	14	35	8	1					141	367
900– 999	6	4	4	8	13	22	28	25	64	34	10					218	405
1,000–1,399	28	31	29	48	45	64	101	97	219	169	47	27				905	1,564
1,400–1,999	33	37	26	48	53	52	132	106	249	326	258	173	18	2		1,513	2,051
2,000–2,999	28	31	26	52	46	58	164	120	306	345	375	552	159	16	1	2,279	2,783
3,000–3,999	10	8	11	11	17	19	66	64	108	158	194	328	224	58		1,276	1,562
4,000–4,999	3	4	5	8	11	5	30	27	74	98	94	193	207	91		850	990
5,000–9,999	7	3	6	4	14	8	24	22	61	72	80	173	222	285	13	994	1,127
10,000 and over	1	1	2	8		1	1	4	10	8	12	26	39	69	43	225	766
Total	167	169	142	247	255	265	643	511	1,159	1,229	1,074	1,472	869	521	57	8,780	21,832

HOLDINGS GROWING WHEAT FOR GRAIN, CLASSIFIED ACCORDING TO ACREAGE SOWN AND SIZE OF SHEEP FLOCK—SEASON 1959–60

Size of Sheep Flock (number)	Area of Wheat for Grain (acres)															Total All Rural Holdings	
	Under 10	10–19	20–29	30–49	50–69	70–99	100–149	150–199	200–299	300–399	400–499	500–699	700–999	1,000–1,999	2,000 and over	Total	
Nil	16	18	8	30	32	22	67	45	83	61	42	55	14	8	1	502	8,882
1– 49	9	4	1	6	3	2	5	1	5	3	1	2		1		43	878
50– 99	1	7	3	1	2	2	3	3	4	5	3	3	1	1		39	372
100– 199	4	7	7	8	12	7	19	10	19	11	10	8	1	1		124	605
200– 299	10	3	7	7	9	10	22	14	32	22	20	12	3			171	478
300– 399	5	6	4	9	7	8	28	23	57	43	27	21	8			246	516
400– 499	2	7	8	10	16	9	34	33	93	87	47	44	11	2		403	639
500– 699	16	17	18	28	18	33	81	73	192	223	150	150	35	9		1,043	1,469
700– 999	32	27	20	38	43	53	105	82	258	290	299	381	133	32	2	1,795	2,264
1,000– 1,399	31	28	25	31	41	42	109	106	192	261	263	422	270	74	1	1,896	2,314
1,400– 1,999	17	30	22	46	36	42	89	65	128	142	153	254	244	152	2	1,422	1,699
2,000– 2,999	18	9	12	23	25	29	51	39	61	61	39	79	105	156	9	716	912
3,000– 4,999	3	5	5	8	11	4	27	13	26	19	17	35	34	71	18	296	454
5,000– 9,999	3		2	1		2	3	4	9	1	3	6	10	13	22	79	233
10,000–19,999				1										1	1	3	96
20,000–49,999		1													1	2	20
50,000 and over																	1
Total	167	169	142	247	255	265	643	511	1,159	1,229	1,074	1,472	869	521	57	8,780	21,832



HARVESTING COTTON

Ord River Irrigation Area

The first five farmers in the Ord River irrigation area, who received allocations of land in 1962, harvested their first crops of cotton in May-June, 1964. Two-thirds of the crop was of premium grade and all of it was sold in Australia. Figures published by the Department of Agriculture show that the production of lint was 609,351 lb. and the gross return to the farmers was £125,901.

WHEAT FOR GRAIN—AREA AND PRODUCTION: AUSTRALIAN STATES

Season	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Australian Capital Territory	Australia
AREA SOWN TO WHEAT FOR GRAIN ('000 ACRES)								
1957–58	2,257	1,835	461	1,331	**2,957**	6	1	8,848
1958–59	3,178	1,810	704	1,408	**3,292**	6	1	10,399
1959–60	3,950	2,261	683	1,549	**3,719**	8	2	12,172
1960–61	4,076	2,672	693	1,969	**4,021**	7	1	13,439
1961–62	4,498	2,849	750	2,229	**4,380**	16	1	14,723
PRODUCTION OF WHEAT ('000 BUSHELS)								
1957–58	10,603	32,134	6,657	14,914	**33,100**	153	5	97,566
1958–59	66,441	42,697	16,097	32,032	**57,650**	164	40	215,121
1959–60	75,358	38,793	13,523	11,929	**58,670**	181	47	198,501
1960–61	84,657	67,587	10,999	46,395	**63,900**	148	30	273,716
1961–62	78,350	56,879	12,018	33,854	**65,700**	345	32	247,178
YIELD PER ACRE (BUSHELS)								
1957–58	4·7	17·5	14·5	11·2	**11·2**	26·1	8·9	**11·0**
1958–59	20·9	23·6	22·9	22·8	**17·5**	25·4	28·1	20·7
1959–60	19·1	17·2	19·8	7·7	**15·8**	22·0	26·8	16·3
1960–61	20·8	25·3	15·9	23·6	**15·9**	21·4	28·5	20·4
1961–62	17·4	20·0	16·0	15·2	**15·0**	22·2	22·7	16·8

Oats

Although oats have been grown in Western Australia since the early development of wheat farming, cultivation was somewhat limited until stimulated by the introduction of large-scale sheep raising in the agricultural areas, when their high nutritional worth as stock feed made them a very valuable crop. The area sown to oats for grain increased from 193,486 acres in 1920 to 274,874 in 1930, to 429,177 in 1940, to 585,701 in 1950 and 1,329,804 in 1960. In 1961 it declined to 1,230,651 acres.

In addition to their importance as local stock feed, oats are exported in substantial quantities. In 1961–62 the total sold overseas was 9,529,359 bushels, the principal buyers being the Federal Republic of Germany, the Netherlands, the Republic of China (Mainland) and the United Kingdom. Exports to other Australian States are negligible.

Although growers are free to market oats in any way they wish, in practice a large proportion of all sales, whether for export or the local market, is effected through the Western Australian State Voluntary Oats Pool, which is conducted by the Grain Pool of W.A. under the control of the Minister for Agriculture.

OATS FOR GRAIN—AREA AND PRODUCTION

Season	Area	Production		
		Total	Average Yield per acre	Gross Value
	acres	bushels	bushels	£
1957–58	1,153,492	13,793,026	12·0	6,136,579
1958–59	1,329,742	22,585,050	17·0	8,027,786
1959–60	1,240,357	19,598,605	15·8	7,964,975
1960–61	1,329,804	21,809,848	16·4	6,874,872
1961–62	1,230,651	20,186,436	16·4	7,524,904

Barley

Barley grows well on the lighter soils of the wheat belt. It is also successful as a first crop on newly-developed land, and the opening up of new areas for farming accounts partly for the remarkable increase in the area sown for grain from 64,205 acres in 1948–49 to a peak of 540,646 acres in 1960–61, from which it declined to 490,572 acres in 1961–62. Both " two-row " and " six-row " barley is grown and, while a large amount of the grain produced is retained on farms for stock feed, a substantial surplus is available

for export. In 1961–62 the quantity exported overseas was 5,410,809 bushels, the principal buyers being the United Kingdom and the Federal Republic of Germany. Most " six-row " barley marketed is shipped overseas, while sales of " two-row " barley are mainly to local maltsters.

The marketing of barley, both for export and for local consumption, is controlled by the Western Australian Barley Marketing Board.

BARLEY FOR GRAIN—AREA AND PRODUCTION

Season	Two-Row				Six-Row			
	Area	Production			Area	Production		
		Total	Average Yield per acre	Gross Value		Total	Average Yield per acre	Gross Value
	acres	bushels	bushels	£	acres	bushels	bushels	£
1957–58	63,180	757,615	12·0	465,355	244,224	2,798,426	11·5	1,413,539
1958–59	50,412	808,701	16·0	544,189	271,081	4,601,516	17·0	2,236,533
1959–60	52,760	1,025,815	19·4	578,527	368,533	6,054,013	16·4	2,801,383
1960–61	71,923	1,175,417	16·3	710,646	468,723	7,320,492	15·6	2,753,990
1961–62	59,167	982,043	16·6	653,124	431,405	6,299,490	14·6	2,761,953

Other Grain and Pulse Crops

Rye and field peas are the only other grain or pulse crops which are cultivated to any appreciable extent. Some maize is grown but not in significant quantities.

RYE AND FIELD PEAS FOR GRAIN—AREA AND PRODUCTION

Season	Rye				Field Peas			
	Area	Production			Area	Production		
		Total	Average Yield per acre	Gross Value		Total	Average Yield per acre	Gross Value
	acres	bushels	bushels	£	acres	bushels	bushels	£
1957–58	8,868	62,583	7·1	35,801	3,855	15,444	4·0	25,483
1958–59	10,577	74,202	7·0	34,096	3,374	26,388	7·8	31,446
1959–60	9,118	77,151	8·5	37,028	3,938	31,764	8·1	44,999
1960–61	10,158	70,434	6·9	34,741	4,371	34,662	7·9	46,360
1961–62	9,572	60,471	6·3	30,190	4,186	34,692	8·3	40,908

Hay

The principal hay crop is oats and 185,298 tons were cut in 1961–62 from 144,399 acres. Wheat is the only other cereal crop which is used extensively for this purpose and in 1961–62 the production was 49,208 tons from 40,302 acres. Large quantities of meadow hay are cut from clover and grass pastures, production in 1961–62 being 154,313 tons from 103,532 acres. Barley, rye, lucerne and field peas are also used for hay making but they are of minor importance only.

HAY—AREA AND PRODUCTION

Season	Oaten		Wheaten		Meadow		Other (*a*)		Total	
	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production
	acres	tons	acres	tons	acres	tons	acres	tons	acres	tons
1957–58	179,607	193,440	73,947	73,393	76,375	109,302	9,054	9,857	338,983	385,992
1958–59	187,730	248,690	47,314	62,393	91,895	136,154	5,674	7,923	332,613	455,160
1959–60	176,565	229,164	53,399	66,276	83,676	129,874	5,846	7,887	319,486	433,201
1960–61	147,893	187,828	40,956	51,696	89,305	133,165	5,884	8,321	284,038	381,010
1961–62	144,399	185,298	40,302	49,208	103,532	154,313	5,316	7,133	293,549	395,952

(*a*) Mainly barley, rye, lucerne and field pea hay.

Green Feed

Large areas of oats are grown for use as green feed for stock. Other crops which are cultivated for this purpose, but to a far lesser extent, are barley, wheat, rye, peas, beans and maize. In 1961–62 the total area of crops used as green feed was 622,092 acres, of which 528,235 acres were under oats.

GREEN FEED—AREA GRAZED AND CUT

Season	Oats	Barley	Wheat	Peas and Beans	Rye	Maize	All Other Kinds (a)	Total
	acres	acres	acres	acres	acres	acres	acres	acres
1957–58	657,288	66,524	20,151	7,314	10,566	690	8,283	770,816
1958–59	670,136	59,017	13,731	6,344	10,211	732	9,151	769,322
1959–60	602,537	53,782	22,685	7,196	8,991	1,021	12,708	708,920
1960–61	514,832	49,015	15,123	6,770	9,035	988	10,395	606,158
1961–62	528,235	52,739	13,491	7,536	9,002	667	10,422	622,092

(a) Mainly sudan grass, lucerne, sorghum, millet, rape and vetches.

Pastures

The first established pastures in the State were cultivated to provide grazing for dairy cattle but, with the rapid increase in the number of sheep carried on wheat farms, by far the greater area is now located in the wheat-growing districts.

Subterranean clover was one of the first pasture species sown and it is still the most important, although other clovers and a variety of grasses including Wimmera ryegrass and perennial ryegrass are also grown extensively. The present practice is to sow a mixture of two or more species, selected for their suitability to the type of soil and rainfall, to give a pasture of about equal parts of clover and grass.

The area under established pasture has increased remarkably from 1·9 million acres in 1945–46 to 8·2 million acres in 1961–62. More than three-quarters of the present acreage occurs in mixed cereal and sheep farming areas.

The top-dressing of pastures with superphosphate has developed to such an extent that this treatment is now general practice.

Considerable quantities of pasture seed are harvested and the total in 1961–62 exceeded 7 million lb., comprising subterranean clover, 5,460,000 lb., lupins, 1,280,000 lb., Wimmera rye grass, 223,000 lb., and 138,000 lb. of other clover and other pasture seed. There is an important export trade in subterranean clover seed and in 1961–62 the total was 812,634 lb., almost all of which went to the other Australian States.

Tobacco

Although there were several earlier experiments in the cultivation of tobacco, the planting of exploratory plots at Manjimup in 1923 first revealed that leaf of a satisfactory quality could be produced in Western Australia and commercial production began in 1930, when 25 acres were planted for a yield of 12,500 lb. of cured leaf. Production rose gradually until wartime shortages of oversea supplies caused a rapid increase, and in 1942–43 there were 1,347 acres planted to tobacco for a yield of 1,336,832 lb. of leaf. Production then declined because of labour shortages and the demands of more essential forms of agriculture for service and civilian requirements, the acreage cropped in 1945–46 being only 296 acres.

Post-war recovery was slow, but by 1952–53 the area planted had risen to 1,525 acres. Subsequently it declined and in 1956–57 only 1,176 acres were planted. The area increased in each of the three following seasons and in 1959–60 had grown to 1,561 acres, which produced 1,369,810 lb. of leaf. Of this total 289,023 lb. remained unsold because it did not meet the requirements of manufacturers.

TOBACCO—AREA AND PRODUCTION

Season	Area	Production		
		Total	Average Yield per acre	Gross Value
	acres	lb.	lb.	£
1957–58	1,266	1,030,588	814·1	526,651
1958–59	1,444	1,198,275	829·8	572,141
1959–60	1,561	(a) 1,369,810	877·5	453,178
1960–61	1,478	(a) 1,287,942	871·4	166,791
1961–62	194	(a) 196,026	1,010·4	25,708

(a) Includes leaf which was unsold—in 1959–60, 289,023 lb.; in 1960–61, 654,706 lb.; and in 1961–62, 110,057 lb.

In 1960–61 an area of 1,478 acres produced 1,287,942 lb. but more than one-half of the leaf offered at the annual auction sales held at Fremantle in August, 1961 was not sold. This collapse of the market was a serious blow to the industry and only 194 acres were planted in 1961. Production was 196,026 lb., of which more than 110,000 lb. could not be sold. The area planted in 1962 was only 28 acres.

Flax for Fibre

Although flax had previously been grown for fibre on a small scale, the first commercial production in Western Australia was begun in 1940, as a wartime measure, under the control of the Commonwealth Flax Production Committee. During that year 996 acres were cropped in the Shires of Waroona and Harvey and a mill was established at Yarloop. The area was rapidly extended to 6,206 acres in 1941–42 and two additional mills were installed, one at Beelerup in the Shire of Donnybrook and the other at Boyup Brook in the Shire of Upper Blackwood. In 1942–43, 8,775 acres were sown for a yield of 6,160 tons of straw and cultivation was maintained at about the same level throughout the remaining war years.

Production declined after the war and is now centralized in the vicinity of Boyup Brook, where the only remaining mill is operated by a co-operative company which acquired it from the Commonwealth Government in 1949. The difficulty of producing fibre at competitive prices has made the industry dependent on government financial assistance and the area sown has fluctuated considerably. Flax is grown as a rotational crop on mixed farms in the district and farmers own shares in the mill, at which all flax straw is retted and scutched before being sent to Victoria for spinning and weaving. Part of the seed which is produced each year as a by-product of fibre production is retained for the next season's planting and the remainder is sold for milling into linseed oil and meal.

Although diseases and insect pests have limited the yield per acre, the Western Australian Department of Agriculture has achieved considerable success in breeding rust-resistant varieties and these, used in conjunction with newly-developed insecticides, have resulted in a significant improvement in recent years.

FLAX FOR FIBRE—AREA AND PRODUCTION

Season	Area	Production		
		Total	Average Yield per acre	Gross Value
	acres	tons	tons	£
1957–58	1,002	1,246	1·2	18,233
1958–59	2,015	3,665	1·8	60,182
1959–60	1,307	2,723	2·1	39,030
1960–61	736	1,176	1·6	17,841
1961–62	91	183	2·0	2,493

Flax for Linseed

During the war, attempts were made to cultivate those varieties of flax which yield linseed as the principal product, but they were largely unsuccessful and were abandoned. Efforts were renewed in 1947–48 but once again were short-lived, being discontinued after five years. Production recommenced in 1957–58 when 1,350 cwt. were harvested from 549 acres and although the area declined to 186 acres in 1959–60, by 1961–62 it had again risen to 1,253 acres from which 3,556 cwt. of linseed was produced.

FLAX FOR LINSEED—AREA AND PRODUCTION

Season	Area	Production		
		Total	Average Yield per acre	Gross Value
	acres	cwt.	cwt.	£
1957–58	549	1,350	2·5	4,725
1958–59	244	847	3·5	2,962
1959–60	186	965	5·2	2,350
1960–61	483	1,376	2·8	4,683
1961–62	1,253	3,556	2·8	12,447

Potatoes

The cultivation of potatoes, the State's principal vegetable crop, is largely confined to the higher rainfall areas of the south-west. Winter crops are planted during June and early July on the frost-free hillsides and drained flats of the coastal areas between Harvey and Donnybrook. Mid-season plantings are made from the middle of July to November on market garden land in the Metropolitan and Swan Divisions, irrigation land in the Shires of Waroona, Harvey and Dardanup and summer-moist areas in the Shires of Donnybrook, Busselton, Manjimup and Albany. Late crops are planted between mid-November and the end of April in approximately the same districts as the mid-season crops.

The average yield of potatoes per acre in Western Australia is consistently very much greater than that for Australia as a whole, and in 1961–62 comparative yields were 8·2 tons and 5·6 tons per acre. This is due mainly to the favourable climatic conditions in Western Australia but an important factor is the reliability, under a wide range of conditions, of the Delaware variety which is grown almost exclusively. There is a substantial export surplus, the bulk of which goes to the other Australian States with smaller but regular consignments being sent overseas, principally to Singapore and Mauritius.

Potato production in Western Australia is controlled, under the provisions of the Marketing of Potatoes Act, 1946–1957, by the Western Australian Potato Marketing Board, which is the sole marketing authority for potatoes produced for local consumption. The object of this provision is to ensure adequate supplies for local consumption and effective marketing of crops.

POTATOES—AREA AND PRODUCTION

Season	Area	Production		
		Total	Average Yield per acre	Gross Value
	acres	tons	tons	£
1957–58	8,322	49,229	5·9	1,385,632
1958–59	7,213	47,103	6·5	1,565,088
1959–60	6,964	56,000	8·0	1,739,455
1960–61	6,656	45,500	6·8	1,709,131
1961–62	6,824	55,700	8·2	1,936,434

Onions

The production of onions is largely confined to the metropolitan and adjacent areas, Osborne Park and Spearwood being the main centres. In these districts onions are usually grown on light sandy soils and yields of up to 20 tons per acre are obtained. In addition, small areas of onions are planted in the South-West and in the Shires of York, Kalgoorlie and Gascoyne-Minilya. The total area planted has fluctuated since the post-war peak figure of 499 acres in 1948–49, and in 1961–62 it was 479 acres for a production of 6,290 tons or 13·1 tons per acre.

Onions are imported annually into Western Australia during the winter but a surplus is produced locally during the summer months and is exported overseas, mainly to Singapore, as well as to the other Australian States. Sales are controlled by the Western Australian Onion Marketing Board under the provisions of the Marketing of Onions Act, 1938–1960, which was passed by the State Parliament in order to stabilize prices.

ONIONS—AREA AND PRODUCTION

Season	Area	Production		
		Total	Average Yield per acre	Gross Value
	acres	tons	tons	£
1957–58	415	4,149	10·0	100,170
1958–59	397	5,043	12·7	162,385
1959–60	392	4,830	12·3	228,930
1960–61	465	5,826	12·5	191,654
1961–62	479	6,290	13·1	236,648

Tomatoes

The main centres of production of tomatoes are at Geraldton and in the districts around Perth. At Geraldton, because of the warm winter climate, growers are able to produce early crops and take advantage of the high prices ruling on the Melbourne market during the winter and spring. They also

supply substantial quantities to the Perth market and there is a consistent export trade with Singapore. Production of early tomatoes has also become important at Carnarvon.

Supplies to the Perth market from December to June are grown in and near the metropolitan area, principally in the Wanneroo and Osborne Park districts. Tomatoes are also grown in a number of districts in the South-West and a small area is planted annually at Kalgoorlie.

The total area under tomatoes reached a peak of 1,555 acres in 1944–45 but the yield per acre in that year was low and total production was only 7,424 tons. Since then, although the area has declined, yields per acre have improved and production in 1961–62 was 9,510 tons from 968 acres, an average of 9·8 tons per acre.

TOMATOES—AREA AND PRODUCTION

Season	Area	Production		
		Total	Average Yield per acre	Gross Value
	acres	tons	tons	£
1957–58	1,007	7,979	7·9	419,324
1958–59	990	8,379	8·5	486,082
1959–60	892	7,945	8·9	507,045
1960–61	839	8,190	9·8	670,899
1961–62	968	9,510	9·8	667,839

Other Vegetables

In addition to the cultivation of potatoes, onions and tomatoes, previously mentioned, many other vegetables are produced, the bulk of them in or near the metropolitan area where growers benefit not only from proximity to the principal market but also from an abundant supply of water at relatively shallow depths. Small quantities are also produced in many country districts. An important early crop of beans is grown at Carnarvon and transported by road to Perth. If the price available is sufficient to compensate for the added cost, portion of this crop is railed or airfreighted to Adelaide and Melbourne.

Details of production of the principal varieties in the seasons 1957–58 to 1961–62 appear in the following tables.

TURNIPS, CARROTS, PARSNIPS, BEETROOT—AREA AND PRODUCTION

Season	Turnips			Carrots			Parsnips			Beetroot		
	Area	Production		Area	Production		Area	Production		Area	Production	
		Quantity	Gross Value		Quantity	Gross Value		Quantity	Gross Value		Quantity	Gross Value
	acres	cwt.	£	acres	cwt.	£	acres	cwt.	£	acres	cwt.	£
1957–58	238	20,244	31,950	342	64,459	116,295	162	19,857	60,150	153	20,978	44,403
1958–59	177	16,458	20,308	313	60,488	94,513	141	17,867	54,122	139	19,272	38,142
1959–60	187	16,689	24,846	331	67,492	120,361	145	20,093	61,200	136	19,921	24,320
1960–61	198	18,603	25,152	318	62,054	72,913	138	17,010	36,359	135	19,530	65,181
1961–62	158	18,656	27,652	324	64,016	164,308	116	15,813	70,763	125	19,526	32,299

PUMPKINS, BEANS, GREEN PEAS—AREA AND PRODUCTION

Season	Pumpkins			Beans						Green Peas		
				Runner			French					
	Area	Production		Area	Production		Area	Production		Area	Production	
		Quantity	Gross Value		Quantity	Gross Value		Quantity	Gross Value		Quantity	Gross Value
	acres	cwt.	£	acres	cwt.	£	acres	cwt.	£	acres	cwt.	£
1957–58	935	58,129	49,410	793	60,011	280,051	69	2,861	12,016	1,121	19,659	155,961
1958–59	788	55,680	64,496	786	68,443	351,341	55	3,528	31,282	1,022	21,156	118,474
1959–60	909	75,474	104,720	895	80,939	339,944	51	2,904	14,907	1,008	20,976	137,043
1960–61	806	65,430	109,868	935	77,354	505,379	57	2,855	19,985	1,586	32,559	149,790
1961–62	1,071	86,656	135,400	1,037	82,648	424,260	45	2,659	12,409	2,016	34,487	130,983

CABBAGES, CAULIFLOWERS, LETTUCE—AREA AND PRODUCTION

Season	Cabbages			Cauliflowers			Lettuce		
	Area	Production		Area	Production		Area	Production	
		Quantity	Gross Value		Quantity	Gross Value		Quantity	Gross Value
	acres	cwt.	£	acres	cwt.	£	acres	cwt.	£
1957–58	366	76,551	80,735	611	98,620	137,758	418	66,753	171,332
1958–59	333	66,113	60,471	588	104,352	167,290	403	66,223	146,794
1959–60	337	70,278	54,442	589	98,568	162,637	389	64,565	151,907
1960–61	330	76,876	85,384	635	114,800	204,487	369	61,289	182,335
1961–62	349	75,979	73,750	669	120,443	184,052	397	64,070	190,609

Orchards

Fruit production is largely confined to the temperate regions between Gingin to the north of Perth and Albany on the south coast. The cool, wet winters and warm, dry summers of this area permit the successful cultivation of a wide variety of fruits. In the southern and south-western sections, apples, pears and stone fruits are grown extensively while in the districts around Perth the principal crops are stone fruits, citrus fruits and grapes. Outside this main fruit-growing area, banana plantations have been established at Carnarvon in the North-West.

The following table shows details of production of the principal groups of orchard fruit during the years 1957–58 to 1961–62.

FRUIT (‡)—AREA AND GROSS VALUE OF PRODUCTION

Season	Pome (*a*)		Citrus (*b*)		Stone (*c*)		Other (*d*)		Total Fruit (‡)	
	Area (*e*)	Gross Value of Production	Area (*e*)	Gross Value of Production	Area (*e*)	Gross Value of Production	Area (*e*)	Gross Value of Production	Area (*e*)	Gross Value of Production
	acres	£	acres	£	acres	£	acres	£	acres	£
1957–58	13,913	2,540,925	4,988	592,033	2,458	358,850	833	228,272	22,192	3,720,080
1958–59	14,486	2,569,947	5,064	678,126	2,464	361,255	889	241,921	22,903	3,851,249
1959–60	15,061	1,955,813	5,260	645,445	2,485	335,943	951	353,908	23,757	3,291,109
1960–61	15,436	3,051,659	5,302	608,390	2,435	335,407	740	61,962	23,913	4,057,418
1961–62	15,598	2,255,246	5,598	649,617	2,479	431,227	812	156,588	24,487	3,492,678

(‡) Excluding grapes. (*a*) Apples, pears and quinces. (*b*) Oranges, mandarins, lemons and grapefruit. (*c*) Apricots, peaches, nectarines, plums and cherries. (*d*) Bananas, loquats, figs, passion fruit, almonds and other minor fruits. (*e*) Includes area under young non-bearing trees.

Apples

Apples, which are the principal fruit crop, account for more than half the total orchard area. Bridgetown, Mount Barker, Donnybrook and Manjimup are the most important centres but other districts in the south-west and in the Darling Range near Perth produce large quantities. In 1961–62 the total area of bearing trees was 10,657 acres which produced 1,137,400 bushels, the principal varieties being Granny Smith, Cleopatra, Jonathan, Delicious, Yates, Dougherty and Dunns.

There is a valuable export trade and oversea shipments average about one million bushels annually. The United Kingdom is the most important market while Sweden and Singapore are also consistent buyers.

APPLES—AREA AND PRODUCTION

Season	Area		Production		
	Trees of Bearing Age	Young Trees not Bearing	Total	Average Yield per acre (*a*)	Gross Value
	acres	acres	bushels	bushels	£
1957–58	11,018	1,874	1,359,458	123·4	2,336,583
1958–59	10,926	2,533	1,550,341	141·9	2,319,647
1959–60	10,812	3,222	1,150,012	106·4	1,728,541
1960–61	10,766	3,666	2,052,600	190·7	2,809,351
1961–62	10,657	3,896	1,137,400	106·7	2,024,645

(*a*) Calculated on the area of bearing trees only.

Pears

Pears are usually grown in conjunction with apples but the area planted and the quantity produced are much less, the total area of bearing trees in 1961–62 being 790 acres and the production 153,400 bushels. The bulk of the crop is consumed locally but small quantities are exported, principally to the United Kingdom and Singapore.

PEARS—AREA AND PRODUCTION

Season	Area		Production		
	Trees of Bearing Age	Young Trees not Bearing	Total	Average Yield per acre	Gross Value
	acres	acres	bushels	bushels	£
1957–58	852	139	98,672	115·8	200,619
1958–59	842	157	169,444	201·2	247,841
1959–60	823	177	138,380	168·1	225,134
1960–61	789	195	168,800	213·9	240,659
1961–62	790	237	153,400	194·2	229,159

Citrus Fruit

While the Shire of Chittering is the chief citrus fruit producer, there are other important areas in the Darling Range near Perth and in the Shires of Swan-Guildford, Murray, Harvey, Capel and Donnybrook. Although oranges are by far the most important crop and account for about four-fifths of the total area, substantial quantities of lemons, grapefruit and mandarins are also produced.

Production is largely for local consumption but there is some export trade, mainly with Singapore.

The following tables give details of production of each type for the years 1957–58 to 1961–62.

ORANGES AND MANDARINS—AREA AND PRODUCTION

Season	Oranges				Mandarins			
	Area		Production		Area		Production	
	Trees of Bearing Age	Young Trees not Bearing	Quantity	Gross Value	Trees of Bearing Age	Young Trees not Bearing	Quantity	Gross Value
	acres	acres	bushels	£	acres	acres	bushels	£
1957–58	3,358	658	439,939	477,604	179	78	22,266	40,342
1958–59	3,370	694	336,836	550,186	179	92	16,146	38,416
1959–60	3,478	737	348,376	510,589	184	107	21,208	44,537
1960–61	3,467	771	462,653	484,341	188	110	18,511	37,742
1961–62	3,574	873	356,398	522,046	205	152	20,099	48,165

LEMONS AND OTHER CITRUS FRUIT—AREA AND PRODUCTION

Season	Lemons				Other Citrus (*a*)			
	Area		Production		Area		Production	
	Trees of Bearing Age	Young Trees not Bearing	Quantity	Gross Value	Trees of Bearing Age	Young Trees not Bearing	Quantity	Gross Value
	acres	acres	bushels	£	acres	acres	bushels	£
1957–58	488	91	128,496	58,688	129	7	23,374	15,399
1958–59	483	110	99,054	74,449	129	7	20,322	15,075
1959–60	501	117	108,276	72,398	129	7	20,137	17,921
1960–61	499	126	141,774	69,439	133	8	22,983	16,868
1961–62	511	157	84,537	65,950	119	7	17,267	13,456

(*a*) Principally grapefruit.

Stone Fruits

Plums, peaches, apricots, nectarines and cherries are grown in the hills districts in the Darling Range near Perth, in the Swan Valley and in many districts in the South-West. The total area under stone fruit in 1961–62 was 2,479 acres, comprising 1,046 acres of plums, 905 of peaches, 338 of apricots, 150 of nectarines and 40 of cherries. The bulk of the stone fruit crop is consumed locally but shipments of plums are sent overseas, mainly to Singapore.

The following tables give details of production of the principal stone fruits for the five years 1957–58 to 1961–62.

PLUMS AND PEACHES—AREA AND PRODUCTION

Season	Plums and Prunes				Peaches			
	Area		Production		Area		Production	
	Trees of Bearing Age	Young Trees not Bearing	Quantity	Gross Value	Trees of Bearing Age	Young Trees not Bearing	Quantity	Gross Value
	acres	acres	bushels	£	acres	acres	bushels	£
1957–58	749	261	80,589	142,100	659	156	77,393	101.471
1958–59	758	273	85,547	134,992	658	160	85,950	111,735
1959–60	768	290	54,707	131.150	647	182	50,064	98,181
1960–61	778	256	95,986	139,854	647	222	88,401	105,590
1961–62	785	261	72,974	165,968	660	245	88,937	151,193

APRICOTS AND NECTARINES—AREA AND PRODUCTION

Season	Apricots				Nectarines			
	Area		Production		Area		Production	
	Trees of Bearing Age	Young Trees not Bearing	Quantity	Gross Value	Trees of Bearing Age	Young Trees not Bearing	Quantity	Gross Value
	acres	acres	bushels	£	acres	acres	bushels	£
1957–58	351	48	41,172	79,599	165	29	19,300	30,237
1958–59	342	46	39,948	80,118	156	30	18,018	28,829
1959–60	327	47	29,061	74,751	154	29	14,201	29,507
1960–61	299	39	49,213	58,235	132	22	17,105	27,463
1961–62	288	50	38,650	82,023	127	23	16,187	28,957

Bananas

Production of bananas is confined almost entirely to a narrow strip of land along the Gascoyne River at Carnarvon. The plantations are dependent on water pumped from bores which tap a subterranean flow in the sands of the usually dry river bed. As a surface flow in the river channel results only from heavy rains, which do not occur every year, a problem is presented in the falling-off of water supplies and in the increase in the salt content of the underground water during long dry periods. These conditions and also periodic damage from cyclones cause fluctuations in the area of the plantations and in production.

The crop is transported by road to Perth and sold locally in competition with bananas imported from other Australian States.

BANANAS—AREA AND PRODUCTION

Season	Area		Production		
	Plants of Bearing Age	Young Plants not Bearing	Total	Average Yield per acre (*a*)	Gross Value
	acres	acres	bushels	bushels	£
1957–58	224	133	43,756	195·3	173,566
1958–59	256	152	70,816	276·6	198,286
1959–60	282	116	107,904	382·6	302,131
1960–61	131	122	7,569	57·8	17,660
1961–62	191	68	48,115	251·9	112,268

(*a*) Calculated on the area of bearing plants only.

Vineyards

Almost three-quarters of the State's 9,000 acres of grape vines are in the Shire of Swan-Guildford, other important centres being Chittering, Wanneroo, Toodyay, Gosnells, Northam and Mundaring.

The area of vines for the production of dried currants, sultanas and table raisins has declined from a post-war peak of 5,830 acres in 1947–48 to 3,624 acres in 1961–62 but it still represents two-fifths of the total area under grapes. Currants are the main item of production and a high proportion of the crop is exported to the other Australian States and overseas, Canada, the United Kingdom and the Republic of South Africa being the principal buyers in 1961–62. Production of sultanas and table raisins is of minor importance and exports are negligible.

Table grapes are grown for the local market and for export overseas, mainly to Singapore and Malaya. More than half a million gallons of beverage wine have also been produced annually for the past five years, mostly for local consumption although small amounts are exported to the other Australian States and overseas.

GRAPES—AREA AND PRODUCTION

Season	Fresh Grapes for Table Use and Wine Making				Dried Vine Fruits				Production of Beverage Wine
	Area		Production		Area		Production		
	Vines of Bearing Age	Young Vines not Bearing	Quantity	Gross Value	Vines of Bearing Age	Young Vines not Bearing	Quantity (Packed Weight)	Gross Value	
	acres	acres	tons	£	acres	acres	tons	£	gallons
1957–58	4,045	493	6,981	411,069	4,223	262	2,247	260,607	526,032
1958–59	4,040	571	6,258	351,121	4,088	182	1,149	129,939	520,595
1959–60	4,397	701	7,597	390,235	3,709	144	1,475	169,187	649,647
1960–61	4,227	915	7,027	373,456	3,623	99	2,034	242,741	556,191
1961–62	4,378	1,015	7,628	365,116	3,502	122	2,007	249,696	669,293

PASTORAL

Throughout this section, where mention is made of the " pastoral areas " the portion of the State referred to comprises the Kimberley, Pilbara, North-West and Central Statistical Divisions together with the Shires of Coolgardie, Kalgoorlie, Laverton, Leonora and Menzies, which form part of the Eastern Goldfields Division. The balance of the State, referred to as the " agricultural areas," comprises the Metropolitan, Swan, South-West, Southern Agricultural, Central Agricultural and Northern Agricultural Divisions together with the Shires of Dundas, Esperance, Ravensthorpe and Yilgarn in the Eastern Goldfields Division.

In the early days of settlement, pastoral activities in Western Australia were largely confined to what are now the agricultural areas and were usually associated with the cultivation of crops. However, beginning with Captain George Grey's visit in 1838 to the area now known as the West Kimberley, explorers increasingly drew attention to the pastoral possibilities of large sections of the present Kimberley, Pilbara, North-West and Central Statistical Divisions.

In 1857 and 1858, F. T. Gregory noted the existence of good pastoral country in the Murchison and the Gascoyne districts and in the course of a journey further to the north in 1861 he discovered the Ashburton, Fortescue, De Grey and Oakover Rivers. His reports of good grazing lands in the area led to the establishment of sheep stations by pastoralists from the south, the first of such ventures, in 1863, being in the De Grey district of what is now the Pilbara Statistical Division. Graziers were also turning their attention to the south-east and in the 1870's pastoral lands were being taken up in the coastal areas to the south of the Nullarbor Plain. Another development in the extension of pastoral activity began with Alexander Forrest's journey through the Kimberley in 1879 and his favourable reports on the suitability of the country for grazing. Leases along the Fitzroy and the Ord Rivers were stocked not only with livestock shipped from the south and from the other Australian Colonies but also with cattle brought overland to the area, principally from Queensland and New South Wales, by remarkable feats of droving.

Pastoral production, comprising the production of meat as well as wool, now contributes about one-third of the total net value of Western Australian primary production. It is no longer confined mainly to the pastoral areas but extends also to most of the agricultural areas of the State.

Sheep

The present distribution of sheep in the State is the result of two opposite trends operating over many years. In the pastoral, or station, areas where the industry is based on long-term pastoral leases, severe droughts led to a decline in the number of sheep, although a slight recovery has taken place in recent years. In the agricultural, or farming, areas however the sheep population has steadily risen. Factors contributing to this rise, particularly since the war, have been the increasing use of subterranean clover in the wheat belt, the provision in many areas of more assured water supplies, a taxation policy which, by the provision of special concessions to primary producers, has encouraged farmers to clear and develop new land, the War Service Land Settlement Scheme which has developed new areas and the stimulating effect of buoyant wool prices in the post-war period.

The overall result has been a marked upward trend in sheep numbers since the war, and at the 31st March, 1962, the State total was 18·3 million or 8·5 million more than the total at the same date in 1946. Numbers in the agricultural areas increased from 7 million, or 72 per cent. of the State total, to a little under 15 million or almost 82 per cent. They also increased in the pastoral areas from 2·7 million to 3·4 million, but as a percentage of the State total this represents a decline from 28 per cent. to 18 per cent.

SHEEP NUMBERS AND DISTRIBUTION

As at 31st March—	In Agricultural Areas		In Pastoral Areas		State Total
	Number	Proportion of State Total (per cent.)	Number	Proportion of State Total (per cent.)	
1946	7,029,761	72·0	2,736,222	28·0	9,765,983
1947	6,990,756	71·4	2,796,246	28·6	9,787,002
1948	7,417,053	71·0	3,026,745	29·0	10,443,798
1949	7,509,710	69·1	3,362,830	30·9	10,872,540
1950	7,518,456	68·8	3,404,711	31·2	10,923,167
1951	8,269,814	72·8	3,092,094	27·2	11,361,908
1952	9,174,640	75·3	3,013,112	24·7	12,187,752
1953	9,304,681	74·6	3,169,991	25·4	12,474,672
1954	9,921,867	75·8	3,165,241	24·2	13,087,108
1955	10,273,780	76·6	3,137,502	23·4	13,411,282
1956	10,976,121	77·7	3,152,047	22·3	14,128,168
1957	11,845,409	79·6	3,041,140	20·4	14,886,549
1958	12,704,210	80·8	3,019,753	19·2	15,723,963
1959	13,070,754	80·6	3,144,490	19·4	16,215,244
1960	13,395,527	81·6	3,016,062	18·4	16,411,589
1961	13,940,614	81·3	3,210,770	18·7	17,151,384
1962	14,951,185	81·6	3,362,694	18·4	18,313,879

An analysis of collected data relating to breeds of sheep as at the 31st March, 1962 showed that Merinos accounted for 92 per cent. of the total. Corriedales, Polwarths and British breeds, the most important of which are Romney Marsh, South Down, Dorset Horn, Border Leicester and English Leicester, comprised 3 per cent. and the remaining 5 per cent. was made up of Crossbreds, including Merino Comebacks. With low wool prices operating during the ten years prior to the war, some farmers turned to the production of fat lamb carcasses for export, mainly to the United Kingdom. The industry which developed as a result was based on the use of Corriedale and British breeds of rams, which in 1962 comprised about 17 per cent. of the rams in the State. As a result of the high wool prices offering after the war the " fat lamb " industry declined sharply in 1950–51 and 1951–52. In recent years, however, farmers have shown renewed interest and the quantity of lamb exported overseas has risen appreciably.

The following table shows the numbers of each breed of sheep in the State at the 31st March, 1962.

BREEDS OF SHEEP AT 31st MARCH, 1962

Breed	Rams (One Year and Over)	Other Sheep	Total
Merino	199,129	16,702,936	16,902,065
Other Recognized Breeds—			
Corriedale	9,362	414,813	424,175
Romney Marsh	4,466	39,000	43,466
South Down	10,517	28,436	38,953
Dorset Horn	9,027	20,746	29,773
Border Leicester	3,668	18,834	22,502
Polwarth	691	11,631	12,322
Suffolk	1,501	3,682	5,183
English Leicester	474	2,354	2,828
Cheviot	517	1,963	2,480
Shropshire	616	1,298	1,914
Ryeland	402	1,083	1,485
South Suffolk	586	783	1,369
Other	89	496	585
Total : Other Recognized Breeds	41,916	545,119	587,035
Merino Comeback (*a*)	244	214,217	214,461
Crossbreds (*b*) and Other Mixed Breeds	672	609,646	610,318
Total : All Sheep	241,961	18,071,918	18,313,879

(*a*) More than half Merino. (*b*) Half or more British breed.

SHEEP FLOCKS AS AT 31st MARCH, 1960, CLASSIFIED ACCORDING TO SIZE OF HOLDING AND SIZE OF FLOCK

Size of Holding (acres)	Size of Sheep Flock (numbers)																Total Flocks	Total All Rural Holdings
	1–49	50–99	100–199	200–299	300–399	400–499	500–699	700–999	1,000–1,399	1,400–1,999	2,000–2,999	3,000–4,999	5,000–9,999	10,000–19,999	20,000–49,999	50,000 and over		
1– 99	290	74	40	11	4	1				1							421	5,001
100– 199	125	63	76	34	16	5	1	2			1						323	1,389
200– 299	100	31	99	37	27	14	8	2									318	1,112
300– 399	99	44	59	44	38	18	20	8	4								334	838
400– 499	81	27	50	39	33	25	38	17	1	1							312	623
500– 599	47	18	35	32	34	23	36	28	8								261	509
600– 799	35	24	51	55	66	57	99	58	34	5							484	745
800– 999	28	21	33	52	64	73	137	117	68	17	2						612	772
1,000– 1,399	24	25	44	55	75	138	326	343	233	92	15						1,370	1,564
1,400– 1,999	18	16	45	41	51	104	333	584	400	225	67	4					1,888	2,051
2,000– 2,999	17	14	34	31	55	98	234	639	745	451	205	36	1				2,560	2,783
3,000– 4,999	7	9	30	40	33	60	187	368	619	568	280	115	10				2,326	2,552
5,000– 9,999	4	3	9	3	20	18	43	81	172	284	260	145	37				1,079	1,127
10,000–19,999		1		1		2		9	20	35	51	63	34	1			217	226
20,000–49,999	2	2		1		1	2	1	2	5	6	18	14	5			59	63
50,000 and over	1			2		2	5	7	8	15	25	73	137	90	20	1	386	477
Total	878	372	605	478	516	639	1,469	2,264	2,314	1,699	912	454	233	96	20	1	12,950	21,832

SHEEP FLOCKS AS AT 31st MARCH, 1960, CLASSIFIED ACCORDING TO SIZE OF FLOCK AND AREA OF ESTABLISHED PASTURE

Area of Established Pasture (acres)	Size of Sheep Flock (numbers)																Total Flocks	Total All Rural Holdings
	1–49	50–99	100–199	200–299	300–399	400–499	500–699	700–999	1,000–1,399	1,400–1,999	2,000–2,999	3,000–4,999	5,000–9,999	10,000–19,999	20,000–49,999	50,000 and over		
Nil	191	73	128	135	172	272	626	912	834	505	238	140	155	91	18	1	4,491	9,147
1– 9	61	8	2	1	1	1		2	1	1							78	493
10– 19	49	16	4	1		1	1	6	2		1						81	368
20– 29	37	11	12	1	4		5	6	1	1	1	1					80	295
30– 49	67	29	31	7	4	9	6	9	3	4							169	513
50– 69	39	28	30	11	6	8	12	10	11	7	2	1		1			166	479
70– 99	58	38	60	21	9	9	19	10	7	3	3	1					238	675
100– 149	98	42	96	61	42	18	39	45	34	16	7						498	1,225
150– 199	68	26	67	56	43	23	38	25	22	13	3	1					385	832
200– 299	90	45	68	80	103	78	135	111	77	42	7	4	1	1			842	1,343
300– 399	58	24	38	49	56	73	147	148	85	34	12	6					730	940
400– 499	28	14	24	18	29	53	140	175	96	47	11	1					636	749
500– 699	16	9	24	21	31	47	150	344	314	131	32	4					1,123	1,245
700– 999	11	7	14	8	9	28	72	296	426	251	75	10					1,207	1,245
1,000–1,999	5	2	7	7	7	17	75	161	382	560	353	85	6				1,667	1,710
2,000 and over	2			1		2	4	4	19	84	167	200	71	3	2		559	573
Total	878	372	605	478	516	639	1,469	2,264	2,314	1,699	912	454	233	96	20	1	12,950	21,832

In the preceding tables sheep flocks at the 31st March, 1960, in size groups, are classified according to the size of the holding and to the area of established pasture. Of the 21,832 holdings of all types, sheep were carried on 12,950. Holdings of between 1,000 and 5,000 acres accounted for 63 per cent. of the flocks and holdings which carried between 500 and 2,000 sheep for 60 per cent. of the flocks. Of the holdings carrying sheep 8,459, or 65 per cent., had some established pasture and 6,764, or 52 per cent., had 200 acres and over.

Wool

During the ten years from 1952–53 to 1961–62 the total wool production rose from 128·1 million lb. to 192·2 million lb. Shorn wool in 1961–62 amounted to 180·0 million lb. and was a record for the State. It was shorn from 19·5 million sheep and lambs, the average weight per fleece being 9·2 lb. The balance of the 1961–62 production consisted of 82,000 lb. of dead wool, 3,252,000 lb. of fellmongered wool and 8,827,000 lb. of wool exported on skins.

During the war years wool was compulsorily acquired by the Commonwealth Government in accordance with an agreement with the United Kingdom. The scheme was administered by the Central Wool Committee and the price paid was determined by a system of appraisement which, however, operated within limits agreed upon by the two Governments. During this period large stocks of wool were accumulated and after the war an organization was formed with the object of selling this surplus with the least possible disturbance to ruling prices. Government control of wool ceased after the war and wool auctions operated by members of the National Council of Wool Selling Brokers were resumed in Perth in 1946. These sales, which are attended by Australian and oversea buyers who bid for individual lots, are now firmly re-established but a portion of the clip is purchased on farms by wool buyers who deal direct with producers. In September, 1957, auctions were held at Albany for the first time. Sales in Perth were discontinued in 1960 and the selling centre was transferred to Fremantle.

SHEEP SHORN AND WOOL PRODUCTION

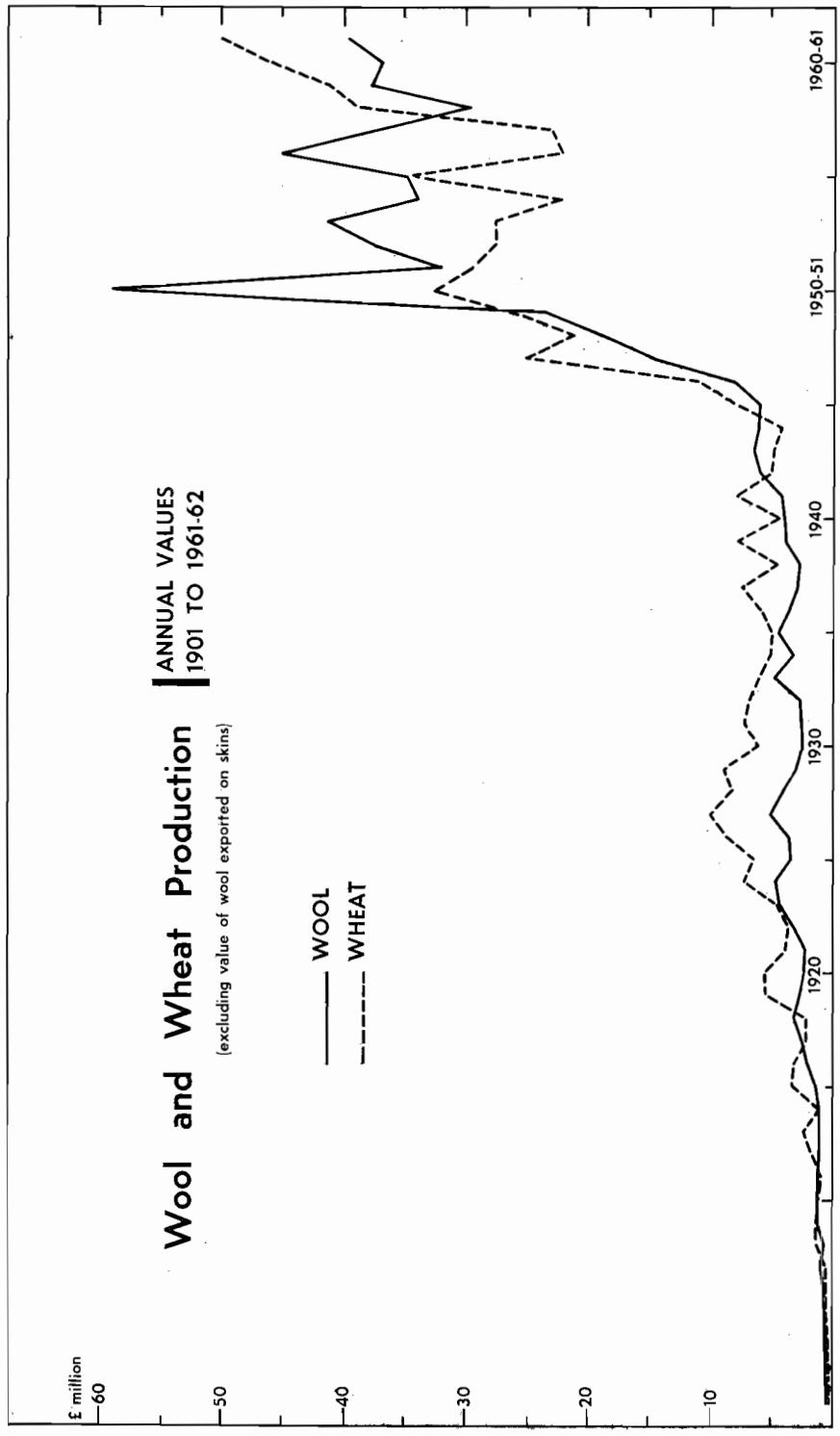
Year	Sheep Shorn (a)			Average Weight per Fleece (a)	Wool Production (in the grease)				
	Sheep	Lambs	Total		Shorn (a)	Dead Wool (a)	Fell-mongered (b)	Exported on Skins (b)	Total (c)
	'000	'000	'000	lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
1953	10,929	2,539	13,468	8·8	118,138	158	2,430	7,422	128,148
1954	11,312	2,655	13,967	9·1	126,513	134	2,317	5,478	134,442
1955	11,724	2,643	14,367	8·4	121,000	125	3,048	5,489	129,662
1956	12,232	2,661	14,893	9·8	146,196	93	3,475	6,690	156,454
1957	12,768	3,158	15,926	9·2	145,797	115	2,462	8,028	156,402
1958	13,317	3,182	16,499	9·0	149,125	108	1,793	7,255	158,281
1959	13,916	3,349	17,265	9·0	154,661	80	2,617	9,164	166,522
1960	14,423	3,541	17,964	8·8	157,929	116	2,847	9,550	170,442
1961	14,801	3,623	18,424	9·7	178,600	106	3,511	9,136	191,353
1962	15,461	4,055	19,516	9·2	180,000	82	3,252	8,827	192,161

(a) Year ended 31st March. (b) Year ended 30th June. (c) See notes (a) and (b).

GROSS VALUES OF WOOL PRODUCTION

Year	Shorn and Dead Wool (a)	Fellmongered Wool (b)	Wool Exported on Skins (b)	Total (c)
	£	£	£	£
1953	37,115,080	445,641	1,603,847	39,164,568
1954	40,739,053	544,284	1,239,515	42,522,852
1955	33,528,921	463,643	1,020,168	35,012,732
1956	34,383,966	436,981	1,059,795	35,880,742
1957	44,716,312	425,311	1,823,357	46,964,980
1958	37,382,713	231,372	1,595,142	39,209,227
1959	29,337,844	365,835	1,210,987	30,914,666
1960	37,193,254	457,537	1,682,859	39,333,650
1961	36,401,689	529,722	1,380,736	38,312,147
1962	39,254,147	387,145	1,618,921	41,260,213

(a) Year ended 31st March. (b) Year ended 30th June. (c) See notes (a) and (b).


Wool and Wheat Production
(excluding value of wool exported on skins)
ANNUAL VALUES
1901 TO 1961-62
WOOL
WHEAT
£ million
60
50
40
30
20
10
1920
1930
1940
1950-51
1960-61

Although the greater proportion of the woolclip is exported in the grease, scouring is done in the State and scoured wool is an appreciable item in the external wool trade. During 1961-62 exports of greasy and scoured wool were 136·9 million lb. and 25·3 million lb. respectively. The most important buyers of greasy wool were Japan, the United Kingdom, France, Italy, the Union of Soviet Socialist Republics, the Federal Republic of Germany, Belgium-Luxembourg, the United States of America, the Republic of China (Mainland) and Poland. Principal purchasers of scoured wool were the Republic of China (Mainland), the United States of America, the United Kingdom, the Federal Republic of Germany, Canada and Italy.

Beef Cattle

The main centres of beef production are in the Kimberley Statistical Division, which in 1962 carried 550,613 head of beef cattle or 56 per cent. of the State total. Other pastoral areas carried 66,088 head and agricultural areas 366,100.

The cattle which were originally shipped or driven overland from the other Australian Colonies to start the industry in the northern pastoral areas were preponderantly shorthorn breeds, and these still form the great bulk of all beef cattle. Carcass weights, however, have been increased by importing better-type bulls and by improving watering facilities, both on the cattle stations and on the stock routes.

Killing and freezing works operate at the ports of Wyndham, Derby and Broome. To minimize loss of weight sustained in droving to ports some cattle are slaughtered inland at Glenroy Station and the carcasses transported to the freezing works at Derby. Frozen and chilled beef from Wyndham, Derby and Broome is mainly exported overseas, either direct or by trans-shipment at Fremantle, but some is shipped south for consumption in the metropolitan area.

Although some beef cattle are shipped from northern ports for slaughtering and consumption in the metropolitan area, by far the greater proportion of the local demand in the southern part of the State is supplied from the agricultural areas. Much of this beef comes from culled stock from dairy herds. As indicated in the following table, the number of beef cattle in the agricultural areas has increased considerably in recent years.

BEEF CATTLE—NUMBERS AND DISTRIBUTION

As at 31st March—	In Agricultural Areas		In Pastoral Areas		State Total
	Number	Proportion of State Total (per cent.)	Number	Proportion of State Total (per cent.)	
1953	125,310	20·5	487,082	79·5	612,392
1954	133,990	22·3	466,188	77·7	600,178
1955	136,994	21·7	495,335	78·3	632,329
1956	158,248	23·5	515,065	76·5	673,313
1957	183,760	25·1	549,354	74·9	733,114
1958	205,372	26·6	566,150	73·4	771,522
1959	217,220	27·7	567,243	72·3	784,463
1960	237,185	29·1	576,776	70·9	813,961
1961	290,050	33·1	586,107	66·9	876,157
1962	366,100	37·3	616,701	62·7	982,801

In the tables on page 272 beef cattle herds at the 31st March, 1960, in size groups, are classified according to the size of the holding and the area of established pasture. Of the 21,832 rural holdings of all types, beef cattle were carried on 6,421. Holdings of between 1,000 and 5,000 acres accounted for 47 per cent. of the herds, and holdings which carried less than 50 beef cattle for 77 per cent. of the herds. Of the holdings carrying beef cattle 5,296, or 83 per cent., had some established pasture and 3,870, or 60 per cent., had 200 acres and over.

Slaughtering

Beef from cattle slaughtered at Wyndham, Derby, Broome and Glenroy in the Kimberley Division is principally for export. The local market for meat is supplied mainly from abattoirs at Midland, Fremantle, Waroona, Harvey, Albany and Kalgoorlie but these establishments, with the exception of Kalgoorlie, also slaughter for the export trade. The many small establishments which operate in country towns also contribute substantially to total production, and farms and stations commonly slaughter sufficient for their own requirements.

The table on page 273 gives details of slaughterings both in abattoirs and on stations and farms.

BEEF CATTLE HERDS AS AT 31st MARCH, 1960, CLASSIFIED ACCORDING TO SIZE OF HOLDING AND SIZE OF HERD

Size of Holding (acres)	Size of Beef Cattle Herd (numbers)															Total Herds	Total All Rural Holdings
	1–9	10–19	20–29	30–49	50–69	70–99	100–149	150–199	200–299	300–499	500–999	1,000–1,999	2,000–4,999	5,000–9,999	10,000 and over		
1– 99	218	65	28	11	1	1	1	1								326	5,001
100– 199	176	101	48	63	22	12	1			1						424	1,389
200– 299	143	76	63	55	27	19	2	1								386	1,112
300– 399	106	51	30	46	29	27	19	4	3							315	838
400– 499	81	38	35	44	25	25	20	4	3	2						277	623
500– 599	73	45	37	42	24	19	14	6	3	3						266	509
600– 799	90	60	35	57	31	32	18	7	8	1						339	745
800– 999	97	39	28	71	26	29	20	8	5	7						330	772
1,000– 1,399	181	105	85	88	48	37	24	10	15	2	1					596	1,564
1,400– 1,999	252	145	78	104	37	30	19	14	16	11	8					714	2,051
2,000– 2,999	335	179	121	125	75	43	31	6	11	10	3					939	2,783
3,000– 4,999	279	155	81	97	53	36	29	14	10	9	2					765	2,552
5,000– 9,999	110	60	38	47	27	25	25	12	16	13	4					377	1,127
10,000–19,999	18	11	7	15	11	6	7	6	5	6	4					96	226
20,000–49,999	3	3	1	1	2	5	1		1	3			1			21	63
50,000 and over	32	22	11	17	10	13	18	7	11	16	16	21	17	21	18	250	477
Total	2,194	1,155	726	883	448	359	249	100	107	84	38	21	18	21	18	6,421	21,832

BEEF CATTLE HERDS AS AT 31st MARCH, 1960, CLASSIFIED ACCORDING TO SIZE OF HERD AND AREA OF ESTABLISHED PASTURE

Area of Established Pasture (acres)	Size of Beef Cattle Herd (numbers)															Total Herds	Total All Rural Holdings
	1–9	10–19	20–29	30–49	50–69	70–99	100–149	150–199	200–299	300–499	500–999	1,000–1,999	2,000–4,999	5,000–9,999	10,000 and over		
Nil	519	190	86	87	36	36	31	15	16	17	15	21	17	21	18	1,125	9,147
1– 9	38	1		1												40	493
10– 19	56	10	5	3												74	368
20– 29	48	22	7	4	2											83	295
30– 49	91	34	17	9	2		2		1							156	513
50– 69	65	37	25	13	4	2	1									147	479
70– 99	92	60	22	34	9	3		1								221	675
100– 149	155	94	45	67	27	20	1									409	1,225
150– 199	106	48	45	49	26	18	4									296	832
200– 299	176	103	79	87	39	48	27	3	2							564	1,343
300– 399	135	74	63	68	41	33	23	10	1	3						451	940
400– 499	95	65	40	49	32	28	29	9	6	2	..					355	749
500– 699	150	103	70	107	57	51	35	19	26	4	1					623	1,245
700– 999	181	119	74	113	47	30	29	13	16	15	2					639	1,245
1,000–1,999	241	159	114	140	80	57	32	17	23	26	9					898	1,710
2,000 and over	46	36	34	52	46	33	35	13	16	17	11		1			340	573
Total	2,194	1,155	726	883	448	359	249	100	107	84	38	21	18	21	18	6,421	21,832



Above—Young Southdown stud rams at Armadale in the Darling Range near Perth

Below Measuring fleece at Department of Agriculture shearing school (*see letterpress overleaf*



The Department of Agriculture conducts ten shearing schools each year. The course is of two weeks' duration and is designed to provide a sound training for young shearers. The routine illustrated is followed by Merino stud breeders who use fleece measurement as an aid to ram selection. The wool samples drawn undergo further tests at the wool testing laboratory of the Department of Agriculture.

LIVESTOCK SLAUGHTERED (*a*)

Year ended 30th June—	Sheep		Lambs		Cattle		Calves	
	Number	Gross Value (*b*)	Number	Gross Value (*b*)	Number	Gross Value (*b*)	Number	Gross Value (*b*)
		£		£		£		£
1958	1,167,164	2,453,418	696,747	2,369,573	187,614	5,266,382	30,828	344,783
1959	1,611,892	2,564,250	817,389	2,215,710	221,722	6,855,520	31,345	363,450
1960	1,816,021	3,172,684	849,825	2,154,941	218,444	7,722,699	26,145	368,362
1961	1,712,660	3,656,264	953,544	2,858,666	193,572	7,586,394	16,713	268,291
1962	1,481,524	3,101,965	1,016,662	2,763,863	222,332	7,428,947	19,808	285,411

(*a*) Mainly slaughterings for human consumption but also includes small numbers of livestock slaughtered for boiling down. Details of pigs slaughtered are shown on page 277. (*b*) Value " on hoof " at principal market.

DAIRYING

Compared with the wheat, wool and meat producing industries, dairying as a major well-organized rural activity is of fairly recent origin. Its growth was retarded initially by the difficulty of clearing heavily timbered country in the South-West and the need for special methods of pasture establishment, but these problems have been progressively overcome and dairying is now a significant feature of primary production, although only limited development has taken place in recent years.

Until the establishment of the first butter factory at Busselton in 1898, dairy farming in Western Australia was essentially for the production of whole milk, although small quantities of farm butter were marketed. As more factories commenced processing, the industry steadily developed and its growth was further stimulated by the establishment of irrigation areas, the first at Harvey in 1916, and by the introduction of the Group Settlement Scheme in 1921. Another important factor in increasing production was the successful establishment of subterranean clover which resulted in a marked improvement in pastures. This expansion continued until after the war but since then production has remained at about the same level.

The industry has been assisted by the extensive experimental work carried out by the Department of Agriculture and the advisory service which it provides on all aspects of dairy farming. The Department also established in May, 1956 an artificial insemination centre at its Wokalup Research Station and dairy herds, which consist mainly of Australian Illawarra Shorthorn, Jersey, Guernsey and Friesian breeds, are now being served from eight distributing centres.

Price instability has been one of the major difficulties of the industry and in 1926 the " Paterson Plan, " which was a voluntary scheme of price stabilization, was introduced. It met with considerable success but weaknesses finally became apparent and it was abandoned in 1934 in favour of the Dairy Products Marketing Regulation Act passed by the State Parliament. On the 1st April, 1946, Western Australia entered the voluntary butter price equalization scheme, operated since 1936 by the Commonwealth Dairy Produce Equalization Committee Ltd., and in January, 1947 the State extended its participation to include cheese. The Committee, which comprises certain members of the State Dairy Products Boards and other persons representing the industry, enters into agreements with manufacturers to secure to them equal rates from sales of butter and also of cheese, and for this purpose may fix basic prices at which these products sold in Australia or abroad are to be taken into account. The effect is that local and export trade are distributed among manufacturers in equitable proportions. The Committee fixes basic prices and equalizes returns to factories through an Equalization Fund. In addition, subsidies provided by the Commonwealth Government are distributed by the Committee, through factories to dairy farmers, by payments on butter and cheese manufactured. The second five-year stabilization plan, which came into operation on the 1st July, 1957, provided that any subsidy made available under the scheme would be determined before the commencement of each season and would be on the basis of a fixed amount in any dairying season. In 1961–62 an amount of £13,500,000 was provided for the Australian industry, the average subsidy rates per cwt. being 62s. 7d. on butter and 24s. 5d. on cheese.

DAIRY CATTLE HERDS AS AT 31st MARCH, 1960, CLASSIFIED ACCORDING TO SIZE OF HOLDING AND SIZE OF HERD

Size of Holding (acres)	Size of Dairy Cattle Herd (numbers)															Total Herds	Total All Rural Holdings
	1–4	5–9	10–14	15–19	20–29	30–39	40–49	50–59	60–69	70–79	80–89	90–99	100–149	150–199	200 and over		
1– 19	352	35	9	2												398	3,132
20– 29	94	24	9	2	3			1	1							134	618
30– 49	104	41	12	10	8	3	1									179	569
50– 69	58	16	15	10	17	10	2	1	1				1			131	324
70– 99	56	31	20	14	19	13	13	10	5	3	2	1	1			188	358
100– 149	110	44	25	27	63	58	48	25	15	7	4		2			428	721
150– 199	79	40	30	26	53	53	61	32	26	14	10	2	8			434	668
200– 299	95	45	28	36	74	88	103	94	72	48	38	23	30	2		776	1,112
300– 399	68	30	16	13	50	65	75	65	64	44	24	18	47	7	2	588	838
400– 499	74	20	14	13	26	35	27	43	34	33	21	16	47	13	4	420	623
500– 699	111	32	16	18	28	23	39	39	38	32	22	28	71	22	12	531	919
700– 999	234	71	28	12	18	13	16	16	13	17	13	5	42	19	22	539	1,107
1,000–1,399	412	125	33	16	10	5	12	7	8	3	6	6	20	10	11	684	1,564
1,400–1,999	574	208	31	14	16	7	4	2	2	6	3	1	6	4	14	892	2,051
2,000–4,999	1,558	561	118	31	29	10	6	3	7	4	1	1	6	4	15	2,354	5,335
5,000 and over	372	182	67	26	12	4	5	4	1	2	1	1		2	3	682	1,893
Total	4,351	1,505	471	270	426	387	412	342	287	213	145	102	281	83	83	9,358	21,832

DAIRY CATTLE HERDS AS AT 31st MARCH, 1960, CLASSIFIED ACCORDING TO SIZE OF HERD AND AREA OF ESTABLISHED PASTURE

Area of Established Pasture (acres)	Size of Dairy Cattle Herd (numbers)															Total Herds	Total All Rural Holdings
	1–4	5–9	10–14	15–19	20–29	30–39	40–49	50–59	60–69	70–79	80–89	90–99	100–149	150–199	200 and over		
Nil	1,447	510	109	34	32	15	9	8	5	6	4	2	3	1		2,185	9,147
1– 9	167	22	7	2	4				1							203	493
10– 19	112	33	12	5	7	2	4						1		1	177	368
20– 29	72	44	15	4	10		1	4				1	2			153	295
30– 49	74	55	42	29	34	14	7	4	4		1	1	3			268	513
50– 69	82	43	23	39	53	26	10	5	7				1	2		291	479
70– 99	78	40	30	32	86	78	54	25	11	7	5	1	2		1	450	675
100– 149	112	61	24	20	78	140	172	95	54	34	16	8	8	1		823	1,225
150– 199	80	32	19	16	31	43	73	94	78	45	24	8	23	2	1	569	832
200– 299	214	64	22	15	30	37	55	70	74	74	53	46	75	6	2	837	1,343
300– 399	186	61	24	8	16	12	12	17	29	29	23	22	74	20	3	536	940
400– 499	191	48	14	16	13	6	6	10	9	7	10	8	48	17	10	413	749
500– 699	339	115	31	17	6	4	4	6	8	3	3	4	33	21	27	621	1,245
700– 999	408	118	24	9	12	1	1	3	4	5	3		10	10	15	623	1,245
1,000–1,999	600	188	48	12	10	8	2		3	1	2			2	22	898	1,710
2,000 and over	189	71	27	12	4	1	2	1		2				1	1	311	573
Total	4,351	1,505	471	270	426	387	412	342	287	213	145	102	281	83	83	9,358	21,832

In the tables on page 274, dairy cattle herds at the 31st March, 1960, in size groups, are classified according to the size of the holding and the area of established pasture. Of the 21,832 rural holdings of all types, dairy cattle were carried on 9,358. Holdings of between 1,000 and 5,000 acres accounted for 42 per cent. of the herds but 87 per cent. of these herds had less than 10 head each. All holdings with less than 10 head accounted for 63 per cent. of the herds in the State. Of the holdings carrying dairy cattle 7,173, or 77 per cent., had some established pasture and 4,239, or 45 per cent., had 200 acres and over.

DAIRY CATTLE AND MILK PRODUCTION (*a*)

As at 31st March	Dairy Cattle							Milk Production (*b*)	
	Dairy Cows		Heifers one year and over	Heifer Calves under one year	Other Calves under one year	Bulls one year and over	Total Dairy Cattle	Quantity	Gross Value (*c*)
	In Milk	Dry							
	No.	No.	No.	No.	No.	No.	No.	gallons	£
1953	57,805	76,118	42,379	37,594	13,800	6,173	233,869	49,769,166	5,591,320
1954	58,621	75,508	41,836	35,069	12,426	6,056	229,516	49,173,673	5,795,994
1955	60,432	74,264	39,708	35,302	12,689	5,850	228,245	52,918,308	6,049,881
1956	59,176	75,341	38,894	33,489	11,215	5,469	223,584	55,373,097	6,192,400
1957	58,851	75,627	37,924	34,246	12,025	5,388	224,061	56,934,772	6,400.575
1958	57,614	76,625	38,135	35,126	12,973	5,178	225,651	54,729,735	6,340,969
1959	55,795	74,185	37,290	33,003	10,352	4,744	215,369	50,966,678	6,101,159
1960	54,698	70,218	43,198	30,011	13,903	4,480	216,508	55,669,001	6,723,668
1961	54,102	71,185	44,529	32,535	17,064	4,858	224,273	58,544,118	7,121,465
1962	55,524	71,497	48,523	35,761	19,392	4,934	235,631	58,239,666	7,071,412

(*a*) Details of butter and cheese production appear in Part 2 of this Chapter. (*b*) Up to 1960, for year ended 31st March; thereafter for year ended 30th June. Includes milk used for processing into butter, cheese and condensery products. (*c*) Includes subsidy paid by Commonwealth Government.

Pig Raising

For many years the rearing of pigs has been carried on in conjunction with the production of butter-fat as cream, thus providing a practical means of utilizing the skim milk obtained. They are also raised on grain-growing holdings and in 1962 more than two-thirds of the pigs in the State were in the wheat belt. There are also a number of farmers in the districts around Perth who specialize in pig raising but in recent years the importance of the industry in this area has declined.

The principal breeds in Western Australia are the Large White, Berkshire, Landrace and Tamworth and crosses of these breeds. Pigs are reared for bacon and ham as well as pork and, although the greater proportion of production is consumed locally, there is some export trade, mainly to other Australian States. In 1961–62 a total of 5,443,814 lb. of pork was shipped interstate and 1,502,658 lb. overseas, mainly to Singapore and the United Kingdom.

PIGS

As at 31st March	Boars	Breeding Sows	Baconers and Porkers	Suckers, Weaners, Slips	Other Pigs	Total
1953	2,158	10,751	23,705	32,069	7,512	76,195
1954	2,669	15,846	29,620	40,665	12,112	100,912
1955	2,598	14,222	32,332	45,506	12,381	107,039
1956	2,462	13,957	29,707	41,649	11,322	99,097
1957	3,311	20,059	41,130	60,340	15,142	139,982
1958	3,322	18,600	50,818	59,118	18,925	150,783
1959	2,673	14,634	38,917	45,478	13,744	115,446
1960	2,984	18,814	42,307	53,054	13,774	130,933
1961	3,882	25,193	55,319	72,369	18,912	175,675
1962	3,893	23,938	(*a*)	(*a*)	(*b*) 146,351	174,182

(*a*) Not recorded separately; included with "Other Pigs." (*b*) Includes baconers, porkers, suckers, weaners and slips.

PIG HERDS AS AT 31st MARCH, 1960, CLASSIFIED ACCORDING TO SIZE OF HOLDING AND SIZE OF HERD

Size of Holidng (acres)	Size of Pig Herd (numbers)											Total Herds	Total All Rural Holdings
	1–4	5–9	10–14	15–19	20–29	30–39	40–49	50–69	70–99	100–199	200 and over		
1– 19	24	10	10	11	12	4	6	2	9	13	6	107	3,132
20– 29	10	6	3	1	7	1	3	2	5	2	4	44	618
30– 49	12	8	5	4	9	5	2	2	1	9	5	62	569
50– 69	9	4	1	1	7	3	5	5	4		1	40	324
70– 99	16	5	2	4	1	2	2	4	2	2	3	43	358
100– 149	34	23	15	11	12	7	4	9	2	5	2	124	721
150– 199	42	29	18	13	23	9	3	3	4	3	3	150	668
200– 299	67	57	42	27	34	24	11	20	5	6	2	295	1,112
300– 399	43	36	34	19	32	12	7	10	6	2		201	838
400– 499	34	21	18	15	23	8	8	7	4	4	1	143	623
500– 699	37	30	27	21	31	15	7	10	5	1	1	185	919
700– 999	46	31	23	22	27	25	19	14	5	5	1	218	1,107
1,000–1,399	66	35	27	27	61	34	23	21	10	12	1	317	1,564
1,400–1,999	62	59	54	49	76	65	40	44	23	11	1	484	2,051
2,000–4,999	173	149	140	133	200	136	112	102	77	56	7	1,285	5,335
5,000 and over	51	37	30	30	55	43	35	40	32	28	10	391	1,893
Total	726	540	449	388	610	393	287	295	194	159	48	4,089	21,832

PIG HERDS AS AT 31st MARCH, 1960, CLASSIFIED ACCORDING TO SIZE OF DAIRY CATTLE HERD AND SIZE OF PIG HERD

Size of Dairy Cattle Herd (numbers)	Size of Pig Herd (numbers)											Total Herds	Total All Rural Holdings
	1–4	5–9	10–14	15–19	20–29	30–39	40–49	50–69	70–99	100–199	200 and over		
Nil	178	136	130	123	184	134	99	102	79	70	29	1,264	12,474
1– 4	194	129	123	98	154	114	83	82	45	39	9	1,070	4,351
5– 9	95	67	47	39	84	52	41	44	33	20	3	525	1,505
10– 14	31	20	12	12	30	15	18	7	7	9		161	471
15– 19	26	18	6	7	9	9	3	4	4	2	3	91	270
20– 29	31	20	14	23	20	7	6	6	7	2	2	138	426
30– 39	33	23	31	10	17	10	7	7	5	1		144	387
40– 49	30	44	25	15	32	14	4	6	2		1	173	412
50– 59	37	26	19	20	28	9	6	4	3	1		153	342
60– 69	24	22	16	11	17	6	8	5	3	4	1	117	287
70– 79	9	12	9	11	11	6	3	6	2	3		72	213
80– 89	9	2	3	2	5	6	1	4				32	145
90– 99	7	4	2	3	7	3		2	2	1		31	102
100–149	14	10	11	9	9	6	5	12	1	4		81	281
150–199	4	1	1	5	3	1				1		16	83
200 and over	4	6				1	3	4	1	2		21	83
Total	726	540	449	388	610	393	287	295	194	159	48	4,089	21,832

In the tables on page 276 pig herds at the 31st March, 1960, in size groups, are classified according to the size of the holding and the size of the dairy cattle herd on the holding. Of the 21,832 rural holdings of all types, pigs were carried on 4,089. Holdings with between 1,000 and 5,000 acres of land accounted for 51 per cent. of the pig herds and those which carried less than 15 head for 42 per cent. of the herds. Of the holdings carrying pigs 2,825, or 69 per cent., had some dairy cattle and 1,230, or 30 per cent., had 10 or more dairy cattle.

PIGS SLAUGHTERED; BACON AND HAM

Year ended 30th June:	Pigs Slaughtered		Bacon and Ham	
	Number	Value (*a*)	Factory Production	Exports (excluding Ships' Stores)
		£	lb.	lb.
1953	(*b*) 129,524	(*b*) 1,939,832	8,272,455	1,434,058
1954	114,873	2,058,735	7,722,949	1,512,790
1955	182,531	1,993,541	7,427,758	1,013,891
1956	160,815	2,109,552	7,237,217	1,157,761
1957	157,534	2,336,675	6,839,975	1,465,185
1958	219,712	2,340,241	6,612,477	1,080,835
1959	197,095	2,217,763	6,619,106	463,856
1960	168,563	2,506,135	7,117,467	499,562
1961	194,625	2,585,157	7,084,789	245,911
1962	264,444	2,584,529	7,839,387	169,013

(*a*) Value "on hoof" at principal market or at factory door. (*b*) For year ended 31st December, 1952.

LIVESTOCK IN AUSTRALIA

The following table gives details of livestock numbers in each State and Territory at the 31st March, 1962, together with Australian totals.

LIVESTOCK NUMBERS AT 31st MARCH, 1962—AUSTRALIAN STATES
(thousands)

State or Territory	Horses	Cattle			Sheep	Pigs
		Dairy	Beef	Total		
New South Wales	168	1,272	3,127	4,399	69,498	471
Victoria	61	1,824	1,332	3,156	27,533	325
Queensland	217	1,208	5,890	7,098	22,125	433
South Australia	25	275	385	660	16,415	170
Western Australia	**40**	**235**	**983**	**1,218**	**18,314**	**174**
Tasmania	9	229	196	425	3,531	76
Northern Territory (*a*)	41		1,063	1,063	10	3
Australian Capital Territory	1	3	11	14	286	
Australia	562	5,046	12,987	18,033	157,712	1,652

(*a*) As at end of June.

POULTRY FARMING

Poultry farming in Western Australia is now mainly a specialist industry and a large proportion of the egg production is on holdings which carry sufficient birds to make the activity the sole or predominant source of income. Most of the commercial poultry farms are situated in the Metropolitan and Swan Statistical Divisions, within a 30-mile radius of Perth, but a substantial number of birds are also kept for commercial production on orchards, dairy farms and wheat farms throughout the agricultural areas.

On specialist poultry farms modern developments in breeding, sexing and nutrition have resulted in considerably higher egg production per bird. Egg-producing birds are largely first-cross hens, bred mainly from White Leghorn cocks and Australorp hens. Various crosses are used for the production of poultry meat, which has increased considerably in recent years.

Under the Marketing of Eggs Act, 1945–1960, all producers are required to market their eggs either through the Western Australian Egg Marketing Board or under the permit system which is administered by the Board. The principal purpose of this legislation is to ensure satisfactory disposal of eggs, including that surplus over local requirements which is consistently produced and which must be sold

overseas at prices which usually do not offer a reasonable return to the producer. In order to provide a fund with which to equalize returns from local and export sales the Board makes a charge on all eggs sold locally, the amount of the charge varying with the proportion of eggs being exported and the export price obtained.

Saudi Arabia, Aden, Qatar, the Bahrain Islands, Singapore and Hong Kong are now the most important oversea markets for eggs in the shell. Exports of egg pulp were not significant in 1961–62, when Saudi Arabia was the principal buyer.

POULTRY

As at 31st March—	Fowls	Ducks	Turkeys	Geese
1953	971,583	31,722	10,086	1,189
1954	1,009,931	14,827	8,458	748
1955	909,389	13,009	7,421	697
1956	864,956	11,873	9,598	712
1957	955,069	11,845	11,671	1,557
1958	901,659	12,129	7,453	1,079
1959	872,258	11,560	5,891	1,416
1960	951,284	12,785	8,740	1,079
1961	1,059,116	15,527	7,335	1,031
1962	1,225,061	17,853	9,145	1,203

EGG PRODUCTION AND POULTRY SLAUGHTERED FOR TABLE PURPOSES

Year ended 31st March—	Egg Production (*a*)		Poultry Slaughtered for Table Purposes
	Quantity	Gross Value	Gross Value
	doz.	£	£
1953	7,577,620	1,605,268	617,179
1954	8,113,717	1,788,625	593,378
1955	7,802,232	1,544,668	551,326
1956	7,093,451	1,472,560	537,497
1957	7,443,878	1,623,667	(*b*) 254,871
1958	7,810,668	1,597,324	(*b*) 350,907
1959	7,563,740	1,614,077	(*b*) 359,469
1960	7,165,979	*1,534,679	(*b*) 488,625
1961	7,055,794	1,564,730	(*b*) 701,952
1962	7,480,180	1,700,942	(*b*) 710,049

(*a*) Excludes non-commercial production. (*b*) Figures not comparable with those for 1955–56 and earlier years due to alteration in method of valuation. * Revised.

BEE KEEPING

Commercial producers of honey in Western Australia may be divided into three categories. There are a comparatively small number of specialist apiarists, engaged solely or mainly in honey production, who operate on a large scale and transport their hives from district to district. There are also some substantial producers who are engaged in agricultural activities and use their farms as a central site from which they may transport their hives to other areas as necessary. Finally there are the many farmers and orchardists who keep a few hives and produce honey as a minor supplementary activity. This pattern of production is illustrated by the following table.

BEE KEEPERS, BEEHIVES AND HONEY PRODUCTION(†)—1961–62

Classification of Hives(†)	Bee Keepers		Productive Beehives (*a*)		Honey Production	
	Number	Proportion of Total (per cent.)	Number	Proportion of Total (per cent.)	Quantity	Proportion of Total (per cent.)
					lb.	
5– 25	223	50·4	1,524	4·0	99,406	1·2
26– 50	67	15·1	1,708	4·5	120,804	1·5
51–100	48	10·8	2,818	7·5	299,699	3·8
101–200	37	8·4	4,421	11·7	545,499	6·8
201–300	20	4·5	4,651	12·3	921,993	11·6
301–500	32	7·2	11,311	29·9	2,865,076	35·9
501–900	11	2·5	6,250	16·5	1,935,600	24·2
Over 900	5	1·1	5,130	13·6	1,194,300	15·0
Total	443	100·0	37,813	100·0	7,982,377	100·0

(†) Excludes details of bee keepers with less than five hives. (*a*) Represents the number of hives at 30th June, 1962 from which honey was taken during the year and excludes hives kept for production but from which no honey was taken, young hives and nuclei.

In 1961–62 exports of honey totalled 4,049,505 lb., the export value being £176,337. The principal buyers were the Federal Republic of Germany, which purchased 2,292,940 lb., and the United Kingdom which took 1,075,982 lb.

BEEHIVES AND HONEY AND BEES-WAX PRODUCTION (*a*)

Year	Beehives (*b*)		Honey Production		Bees-wax Production	
	Productive (*c*)	Unproductive (*d*)	Quantity	Gross Value	Quantity	Gross Value
	No.	No.	lb.	£	lb.	£
1957–58	34,915	5,806	7,313,277	246,427	86,516	17,241
1958–59	37,670	7,016	6,680,371	220,842	83,871	16,544
1959–60	38,398	8,575	5,549,488	162,114	67,520	12,685
1960–61	36,500	10,058	5,311,108	151,367	71,309	14,075
1961–62	37,813	7,450	7,982,377	252,775	93,802	15,946

(*a*) Excludes particulars of bee keepers with less than five hives. (*b*) Number at 30th June. (*c*) Hives from which honey was taken. (*d*) Includes hives kept for production but from which no honey was taken, young hives and nuclei.

THE DEPARTMENT OF AGRICULTURE

Brief references have been made earlier in this Chapter to the important services rendered to rural producers by the Department of Agriculture. The Department is the branch of the State Government Service responsible for bringing scientific advice to farmers and pastoralists, for carrying out research into a wide range of technical problems and for administering Acts of Parliament dealing with agricultural and pastoral matters. Its activities can be classified under the four headings : investigation or research ; advisory, now more commonly called " extension " functions ; provision of certain services for the assistance of the man on the land ; and regulatory work which consists of carrying out the provisions of some of the numerous laws relating to agriculture.

The operations of the Department are organized under a series of Divisions and Branches, the heads of which are responsible to the Director of Agriculture. The Divisions are Animal (including Animal Health and Nutrition Laboratory and sections for Veterinary Services, Animal Husbandry, Apiculture, Poultry and Brands), Wheat and Sheep (including the Cereal Products and Fleece Testing Laboratories), Dairying, Horticultural (covering Fruit, Vegetables and Tobacco), Soils (including Soil Conservation and Irrigation), Plant Research, Biological Services (including Plant Pathology, Entomology, Botany, Seed Certification and Weed Control), and North-West. In addition there are Branches for Vermin Control and Abattoirs and separate sections covering Rural Economics and Marketing, Publications and Library. Muresk Agricultural College is also controlled and staffed by the Department.

Sections of government administration known as Departments of Agriculture usually originated in the demands of farmers for government assistance in coping with their technical problems. The Western Australian Department of Agriculture had its origin in a Bureau of Agriculture which was formed in 1894. In 1898 the Department of Agriculture was established and absorbed the staff of the Bureau. Up to this time, some 70 years after the first settlement, agriculture in Western Australia had made little progress. The area of cleared arable land was only about two per cent. of the present area. Superphosphate had not been used on Western Australian farms and wheat varieties suitable for the drier districts to the east of Northam were not then available. There was little comprehension of the many problems associated with land development and not much public appreciation of the part that science might play in solving them.

From small beginnings the Department's responsibilities and activities extended as agriculture developed. In the first quarter of a century of its existence, expansion and consolidation of farming in the wheat belt overshadowed other activities. That was only natural, as the acreage of wheat for grain expanded from 200,000 in 1905 to nearly four million acres in 1930, and for much of that time the State's development was synonymous with wheat belt expansion.

State Farms and Research Stations

Perhaps the most important work in the Department's first ten or fifteen years was that concerned with the establishment of experiment farms, or " State farms " as they were at first called. The first of these had its origin in plots which were established at Hamel in 1896. Valuable work was carried on at this centre for nearly twenty years in connexion with the growing of potatoes, fruit, cereals, hops, fodder crops and pasture, and some success was achieved with wheat breeding.

Government farms were opened at Narrogin in 1901 and at Nabawa, 25 miles north of Geraldton, in 1902. In 1907 a farm at Nangeenan, near Merredin, was taken over from the Lands Department and is now the Merredin Research Station. In the same year a farm was established in the South-West at Brunswick in order to provide object lessons in dairying, as it was felt that there were great possibilities of expanding the dairying industry. After functioning for several years this farm was closed and the land was subsequently used for closer settlement purposes.

In 1911 a change was made in the policy of the government farms in the wheat belt and their character changed from " experimental " to " experiment " farms. Instead of being conducted mainly with the object of producing revenue they were to be used primarily for collecting information concerning local conditions that would be of value to the district. In addition, pure pedigree seed wheat and oats were bred. It would be difficult to over-estimate the subsequent value of the farms in this new role, which is still one of their most important functions. In later years more " research stations," as the experiment farms came to be called, were established and they now number 20.

Research Stations at Nabawa, Badgingarra, Wongan Hills, Merredin, Beverley, Newdegate, Salmon Gums and Esperance deal with agriculture in the cereal-growing and sheep-raising districts. Stations at Denmark, Bramley and Wokalup serve the dairying districts, and one at Manjimup is concerned with vegetables. Stations at Herdsman Lake in the metropolitan area assist the poultry and vegetable-growing industries. A viticultural research station has been established at Upper Swan and a horticultural research station at Stoneville in the Darling Range to the east of Perth. At Boyanup, near Bunbury, an experimental block has been established to investigate the suitability for irrigation of certain soils in the Capel-Boyanup area in connexion with a proposed extension of irrigation services.

The Kimberley Research Station, operated in conjunction with the Commonwealth Scientific and Industrial Research Organization, is concerned with problems of irrigation in relation to agriculture in the tropics, with particular reference to the agricultural settlement now taking place on the Ord River. At Abydos, near Port Hedland, regeneration of overgrazed pastoral country and a study of sheep breeding problems are the main concerns. At the Gascoyne Research Station at Carnarvon, problems of growing tropical fruits and winter vegetables are being investigated. The newly-established Wiluna Groundwater Research Station is for the study of the controlled use of underground water supplies.

Advisory Services

Extension work is perhaps the Department's most important function and it has undoubtedly exercised a powerful influence in publicizing and accelerating the adoption of better methods. It is difficult to assess the results of any educational undertaking in terms of money, but the desirability of having a well-informed farming community, receptive to new ideas, is obvious. Although the best method of taking advice to farmers is for the technical officer to visit farms for discussion with the farmer on his own property, this is unfortunately not always possible as an officer may have between 500 and 1,000 farms in his district. Individual visits often have to be restricted to cases where a specific request has been made or where some urgent action is required.

Extension officers support and foster the formation of farmers' organizations such as Pasture Groups and attend meetings and field days where talks can be given to groups of farmers. It is estimated that in the past year over 4,000 farmers attended nearly 150 field days with which the Department was associated. Film evenings provided by the Department's mobile film units are of great assistance in this respect. Field experiments, both at the stations and on farmers' properties, form an excellent basis for demonstrations and talks. The various competitions in which extension officers act as judges provide another means of bringing farmers together for discussion. These competitions are generally concerned with crops and pastures but may include other types such as those conducted by Junior Farmers' Clubs for show exhibits and for debates. Extensive use is made of the radio which, in Western Australia, probably reaches more people than does any other medium. Between 200 and 300 broadcasts are given by departmental officers each year. A *Journal of Agriculture* is published every month and has a circulation of about 18,000. Bulletins dealing with a wide variety of subjects are available.

Advisory work is not concentrated in a single Division, as is the case in some Departments of Agriculture, but is carried out by several Divisions and Branches of the Department. In recent years a move has been made to decentralize the Department's work and groups of officers have been stationed at Albany, Bridgetown, Bunbury, Busselton, Denmark, Derby, Esperance, Geraldton, Harvey, Katanning, Manjimup, Merredin, Moora, Mount Barker, Narrogin, Northam, Wiluna and at the Kimberley and the Gascoyne Research Stations. An officer is also stationed at each of the following places : Armadale,

Broome, Camballin, Gosnells, Kalamunda, Kalgoorlie, Kellerberrin, Kununurra, Margaret River, Mundaring, Pinjarra and Port Hedland.

Research Activities

In the field of investigation and research, problems which have been dealt with would comprise a lengthy list and only a few of the more important can be mentioned here. The value to the State of cereal-breeding activities is well known. Two wheat varieties, Nabawa and Bencubbin, which were respectively selected and bred in Western Australia, became in turn the leading varieties in Australia. These, with other cereal varieties produced by the Department, have increased the income of farmers by many millions of pounds over the years in which they have been grown. The introduction of new plant species and varieties, the evaluation of their suitability for local conditions and the determination of rotations for improving yields and maintaining soil fertility are important features of the work in cereal-growing districts.

Research into plant diseases and deficiencies forms another important section of the Department's investigational work. Considerable success has been achieved in the recognition and remedying of deficiencies of trace elements in soils, notably of copper, zinc and molybdenum. As a result of this work, fertilizers containing trace elements have been applied in recent years to about a quarter of the State's farming land. These investigations, together with allied work on superphosphate and the establishment of subterranean clover pastures, constitute the technical factors which have made possible the rapid post-war expansion of light land development.

In the pastoral areas of the north-west the sheep-carrying capacity of large tracts of country has been seriously reduced by drought and overgrazing. Recent work by officers of the Department has shown that much of this country can be reclaimed by adopting systems of grazing management different from those employed in the past.

Nutritional disorders and diseases of farm animals cause considerable loss to farmers and pastoralists. Some of the Department's most notable successes have been achieved when dealing with problems in this field, which include enzootic ataxia. enterotoxaemia, toxic paralysis, and clover disease in sheep, copper and cobalt deficiencies in cattle, Kimberley horse disease, plant poisoning of stock and infertility in dairy cows.

A soil conservation service was established in the Department in 1947. Since then a great deal of information about the incidence and nature of erosion has been collected and many farmers have been assisted with their erosion problems. Considerable attention has also been given to the salt problem in the agricultural districts.

In somewhat more restricted fields the use of a hormone spray instead of cincturing, for currant vines, is a noteworthy change in agricultural practice resulting from investigations by the Department. The selection of the rust-resistant runner bean variety, " Westralia," has greatly reduced one of the hazards with which the bean grower has to contend.

Agriculture Protection

For the control, prevention and eradication of noxious weeds and vermin, there is an Agriculture Protection Board which operates in collaboration with the Department of Agriculture.

The Board, which was established in 1951 following recommendations by a Royal Commission, is constituted under the provisions of the Agriculture Protection Board Act, 1950–1960, and comprises the Director of Agriculture or his deputy, as Chairman ; the Chief Vermin Control Officer of the Department of Agriculture ; an officer of the State Treasury ; two representatives of the agricultural industry ; one representative of the pastoral industry ; and five representatives of local government authorities.

The income of the Board consists of appropriations from the Consolidated Revenue Fund and other moneys as prescribed by the Agriculture Protection Board Act.

For the purposes of the Agriculture Protection Board Act, the term " noxious weeds " means those plants which are so proclaimed or declared under the Noxious Weeds Act, 1950–1960. " Vermin " means any animal, bird or insect proclaimed to be vermin as provided by the Vermin Act, 1918–1962, and includes rabbits, foxes, dingoes, sparrows, starlings, Argentine ants and grasshoppers.

The Board formulates policies for the control, prevention and eradication of noxious weeds and vermin, advises on methods, directs and assists in general operations, provides services to help local government authorities and landholders in destruction work and conducts scientific research and investigations for the improvement of control techniques and policies. Control work extends to Crown lands, including reserves, for the benefit of adjoining landholders.

Improvements in the control of both noxious weeds and vermin have resulted from the activities of the Agriculture Protection Board and there have been some notable successes, including a great reduction in rabbit numbers effected by the use of myxomatosis virus and by organized drives for their destruction, mainly by poisoning.

Other Services

The Department operates certain services which assist the producer to increase his efficiency. Probably the best known is the production of pure pedigree varieties of seed wheat, oats and barley. These are of value to the cereal grower, who is able to obtain his requirements at moderate cost. Sponsoring and supervising the production of approved lines of seed, notably potatoes and beans, has led to the wide use of these specialized lines with a resulting increased yield, and certification of pure lines of pasture seed gives farmers a guarantee of quality in the seed they buy. Assistance to dairy farmers to form herd-testing units, thus enabling them to gauge the performance of their herds, is another service of similar nature. Assistance and technical advice is given to farmers concerned with the installation of irrigation schemes and the preparation of land for irrigation. An artificial insemination centre for dairy stock has been established at the Wokalup Research Station.

The producers who benefit from these services pay something for them, but not necessarily the full amount of the cost of providing them.

Administration of Acts

The Department of Agriculture is responsible for administering some fifty Acts concerning a wide range of subjects. Some of the more important relate to animal and plant diseases and insect pests, industry trust funds, soil conservation, vermin control, marketing of agricultural products and registration of feeding stuffs, fertilizers and stock brands.

TRAPPING

Although trapping has been carried on from the first years of settlement, it has never been an important industry. In 1961–62 the recorded gross value was only £255,568 but reliable and complete information is difficult to obtain and this amount could therefore be deficient.

Kangaroos have been destroyed in great numbers from the earliest days, the principal reason for the organized destruction being the damage done to pastures and fencing. As early as 1849 the export of skins for the year was no less than 12,387. The number of skins exported or used in local factories in 1961–62 is not available but the value has been estimated at £3,149. Kangaroo meat is used as pet food but estimates included in the gross value of trapping are considered too unreliable to publish separately.

The earliest recorded export of rabbit skins relates to the year 1900 and the meat and skins of these animals have been a source of income to trappers ever since. In an attempt to reduce the damage done to crops and pastures, various methods of control have been adopted and since the second World War an intensive campaign, using myxomatosis virus, poisons and warren ripping, has met with considerable success. As a result, the quantity of rabbit meat produced and the number of skins exported and treated locally have declined greatly and in 1961–62 the total value was estimated at only £92,918.

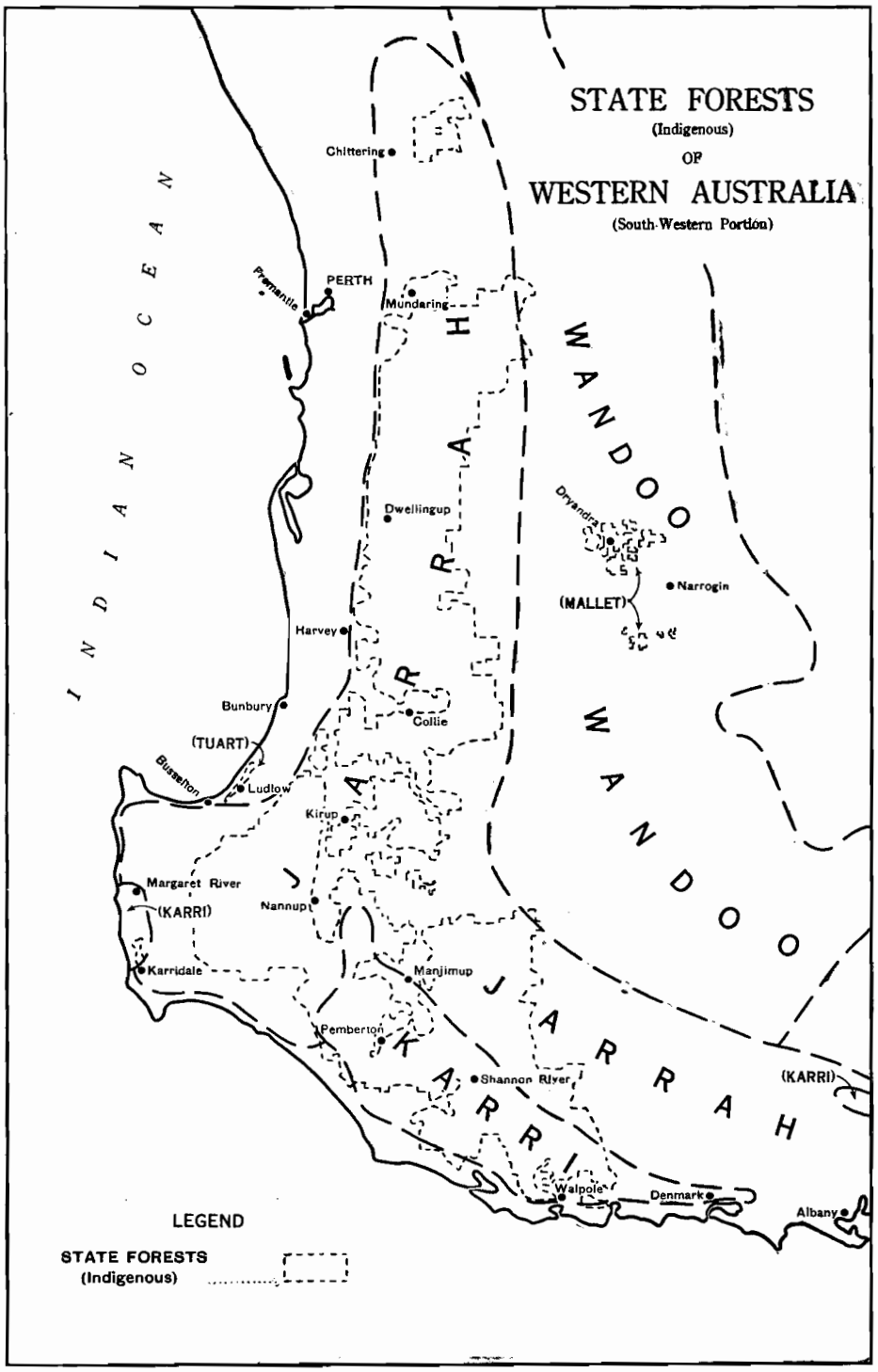
The skins of animals other than kangaroos and rabbits and exports of Western Australian fauna account for the balance of the value of the trapping industry in 1961–62.

FORESTRY

The Prime Indigenous Forests

Although the prime indigenous forests of Western Australia cover only a small percentage of the area of the State, they are of considerable economic importance. This is not only on account of the durability, strength and general-purpose nature of their hardwood timbers, but also because of their occurrence on the water catchment areas in the high-rainfall and closely-populated section of the State. Being easy to regenerate after cutting, they form a natural and effective protection against soil erosion. More than four million acres have been permanently dedicated as State Forests and approximately 2·5 million acres have been established as Timber Reserves under the Forests Act and the Land Act.

Jarrah (*Eucalyptus marginata*) is the State's principal timber and the prime forest covers over three million acres of the State Forests. Karri (*E. diversicolor*) is next in importance and is distributed over some 800,000 acres but only about 20 per cent. of it is in pure stands. Wandoo (*E. redunca*) accounts for a smaller portion of the dedicated area and Tuart (*E. gomphocephala*), another valuable timber, has a restricted area of about 4,000 acres. Marri (*E. calophylla*) and Blackbutt (*E. patens*), which occur through the jarrah and karri forests, are important milling timbers, but the present output is comparatively small.


STATE FORESTS
(Indigenous)
OF
WESTERN AUSTRALIA
(South-Western Portion)
INDIAN OCEAN
Chittering
Fremantle
PERTH
Mundaring
DARLING RANGE
WANDOO
Dryandra
Dwellingup
Narrogin
(MALLET)
Harvey
Bunbury
Collie
(TUART)
Busselton
Ludlow
Kirup
WANDOO
Margaret River
(KARRI)
Nannup
JARRAH
Karridale
Manjimup
Pemberton
KARRI
Shannon River
(KARRI)
JARRAH
Walpole
Denmark
Albany
LEGEND
STATE FORESTS
(Indigenous)

Other eucalypts and many trees of different genera occur within the prime forest belt but they are not of major economic importance. The main distribution of the prime forests, which are practically confined to the south-western portion of the State, is shown on the accompanying map.

The Inland Forests

Beyond the area of prime forest is an inland forest of sclerophyllous woodland, within which are a number of eucalypts (both tree and mallee form), as well as several types of *Acacia*, such as the wattles and mulgas, tea tree (*Melaleuca spp.*) and casuarinas. Sandalwood (*Santalum spicatum*), indigenous to the wheat belt and semi-arid areas of the State, is still exported to Asian countries but is now obtained only from the semi-arid regions.

While none of the inland forest can be classed as suitable for sawmilling in the ordinary sense, it forms an important source of timber for mining and agricultural purposes. During recent years, soil conservation in the regions of low rainfall has received increasing attention and the importance of controlling clearing, grazing and firewood cutting has been recognized. The Forests Department maintains a staff to exercise these controls and to advise on tree planting.

Forestry Administration

Scientific forestry was given considerable impetus in Western Australia with the passing of the Forests Act in 1918. Extensive cutting over the previous fifty years had seriously depleted the State's timber resources and adequate provision had not been made for protection and regeneration. Under the Act, however, wide powers are conferred on the Forests Department, which is granted nine-tenths of the net annual government revenue from forestry sources. The sum received, together with various other grants, is used for regeneration, fire control and associated purposes.

The forests are now managed on a long-range working plan to ensure continuity of the industry, trees being approved for cutting and marked accordingly by trained foresters, who work under the direction of the Conservator of Forests and closely control both the indigenous forest and the mallet and pine plantations. The future productivity of the forests is also safeguarded by ensuring that cutting is carried out in such a way as to protect immature growth and to encourage natural regeneration, which is a very important feature of the Department's policy.

Brown Mallet (*Eucalyptus astringens*), the bark of which is an important source of tannin, once covered large areas on the fringe of the inland forests but was practically exterminated by clearing for farms and by excessive exploitation. It is now being regenerated and the area of Mallet plantations now totals 19,111 acres.

Plantation methods are being employed to grow pines, principally *Pinus pinaster* and *Pinus radiata*, as the State has no indigenous softwoods of commercial significance. Thirteen plantations, with a planted area of 36,597 acres, have been established and a planting programme of 2,500 acres per annum currently being carried out is planned to provide, ultimately, 200,000 acres of pine forest. Most of the land selected for the purpose is of limited value for agriculture but when used for pines it constitutes a valuable long-term investment, with the prospective development of industries for the manufacture of paper, wall-board and similar products.

Because of the hot, dry summer experienced in most of the areas covered by State Forests, there is a considerable risk of damage by fire and intensive precautions are taken by the Department to minimize this danger. Look-out towers, provided with wireless or telephone communication, are manned at strategic points and controlled burning is carried out when conditions are suitable. Restrictions are placed on all burning operations by farmers and other persons when the fire hazard is high and at such times warnings are issued emphasizing the danger.

In association with the system of cutting control, various royalties, licence and permit fees are collected as part of the Consolidated Revenue of the State.

Information concerning forest tenures, the issuing of licences and permits, etc. is given under the heading " Forests Department " in the section *Methods of Leasing* in Chapter VII, Part 1.

Principal Forest Products

Sawn timber is the principal form of forest production, but there has been a rapid increase in the use of logs for plywood manufacture during recent years. Karri and, to a lesser extent, locally-grown pine logs are used for this purpose, together with imported logs.

In addition to these major products, the State's forest wealth includes wandoo (the whole tree) and mallet bark for tanning extract, sandalwood for export and as a source of sandalwood oil, firewood

for general purposes, sheoak (*Casuarina spp.*) for barrel staves, manna gum (from *Acacia sp.*) and various seeds and plants for propagation both in Australia and abroad. Wandoo, jarrah and marri are used as a source of charcoal for the high-grade charcoal pig-iron produced at Wundowie. The karri, wandoo, marri and some inland species are important nectar producers for apiarists, who move their bees to various forest sites in following the nectar flow.

The following table gives details of sawn and round timber production from 1952–53 to 1961–62. It shows that sawn timber production increased from 203·3 million super. feet in 1952–53 to 225·8 million super. feet in 1954–55. A slight recession in 1955–56, when 222·4 million super. feet were cut, was followed by a sharp decline to 204·5 million super. feet in 1956–57 and a further decrease in 1957–58 when 201·7 million super. feet were produced. In 1958–59 production increased to 211·8 million super. feet but in 1959–60 it again declined sharply and the total of 198·9 million super. feet was the lowest since 1951–52. Production fell to 186·9 million super. feet in 1960–61 but recovered slightly in 1961–62 when 192·8 million super. feet were cut. The output of round timber, which consists mainly of mining timber, piles, poles, fencing posts and rails, increased from 20·0 to 21·2 million super. feet between 1952–53 and 1961–62.

TIMBER PRODUCTION (*a*)
(thousand super. feet)

Item	1952–53	1953–54	1954–55	1955–56	1956–57	1957–58	1958–59	1959–60	1960–61	1961–62
Timber—Sawn	203,314	216,021	225,795	222,398	204,475	201.664	211,832	198,903	186,911	192,790
Timber—Round	20,011	24,990	25,698	22,740	23,952	31,509	25,947	26,558	23,405	21,159

(*a*) From local logs and includes railway sleepers and plywood veneers in terms of super. feet.

Sawmilling is dealt with in greater detail under *Secondary Industry* in Part 2 of this Chapter.

In 1961–62 exports of railway sleepers totalled 32·8 million super. feet, of which 8·0 million went to other Australian States and 24·8 million to oversea markets, principally the United Kingdom and New Zealand. In the same year 24·3 million super. feet of other timber was exported to other Australian States and 10·9 million was shipped overseas, the principal markets being New Zealand, the United Kingdom, the Republic of South Africa and Pakistan.

FISHERIES (INCLUDING WHALING AND PEARLING)

The fishing industry in Western Australia consists of three distinct activities, the catching of edible species, whaling and pearl-shell production. In addition, pearl culture has been successfully established in recent years.

General Fisheries

The principal species of edible fish are shown in the following table with the quantities of each species caught in the years 1957–58 to 1961–62.

Since the end of the second World War, crayfish has become the most important item of production of that section of the industry which is concerned with the catching of edible species. Prior to the war there was a small local market for fresh crayfish, but in 1941 production was stimulated by canning for the armed forces. Although canning continued until 1950, it had become far less important by 1947 than another development, the freezing of crayfish tails for export, mainly to the United States of America. The oversea demand, which developed rapidly in post-war years, gave great impetus to the industry and the take increased more than eightfold between 1947 and 1959–60, when total production of live crayfish was 19·5 million lb., valued at £3,013,255 to the fishermen. In 1960–61 production fell to 18·0 million lb. valued at £3,003,201 but in 1961–62 it again increased, the total catch being 19·8 million lb. valued at £4,093,000. In 1961–62 the oversea export of crayfish tails totalled 8·0 million lb., the f.o.b. value being £4·9 million. In addition, consignments of whole crayfish were sent overseas.

The most important commercial species of crayfish in Western Australian waters is *Panulirus cygnus*, which occurs in the vicinity of the Abrolhos Islands, Geraldton, Dongara, Jurien Bay, Cervantes, Lancelin, Fremantle and Bunbury, and is protected from overfishing by the declaration of closed seasons as necessary and the prohibition of the taking of fish of less than a prescribed size. As an additional conservation measure (from the 1st March, 1963), new licences for boats for crayfishing are not granted except in special circumstances. The catch is processed either on specially-equipped freezer boats or at shore stations.

PRODUCTION OF FISH (*a*)

Species—Common Name	1957–58	1958–59	1959–60	1960–61	1961–62
	lb.	lb.	lb.	lb.	lb.
Crustaceans—					
Crabs	34,826	37,893	74,730	48,399	59,041
Crayfish	13,327,286	17,516,853	19,545,439	18,019,237	19,772,000
Prawns	147,192	85,851	131,773	106,069	238,937
Total	13,509,304	17,640,597	19,751,942	18,173,705	20,069,978
Other—					
Bream, Black	18,187	15,323	10,328	18,202	21,813
Bream, Buffalo	14,958	51,377	41,774	42,289	29,586
Bream, Yellow-fin	44,498	35,279	53,586	65,894	48,229
Bream, Silver or Tarwhine	8,226	2,867	7,851	8,072	2,660
Cobbler	553,115	310,690	446,718	659,114	771,129
Cod	20,101	16,829	18,311	29,247	19,794
Flathead	24,601	29,966	24,454	21,146	15,641
Garfish	48,241	47,173	78,898	79,174	43,536
Groper	15,084	15,280	24,571	19,381	17,976
Herring, Perth	59,702	28,791	80,536	112,002	87,674
Jewfish, Westralian	252,675	281,809	396,721	340,108	236,493
Kingfish, Sea (Samson Fish)	86,051	92,779	108,513	75,202	54,524
Leatherjacket	34,272	53,277	61,581	48,474	42,604
Mackerel, Spanish	70,236	61,547	82,247	144,685	82,819
Mullet, Sea	857,003	758,362	787,822	871,989	835,394
Mullet, Yellow-eye	465,296	504,095	432,264	503,269	408,874
Mulloway (River Kingfish)	21,293	10,771	17,543	8,740	17,289
Pike	20,803	15,466	21,632	25,069	25,252
Ruff (Sea Herring)	870,005	1,375,819	1,078,925	916,992	777,823
Salmon, Australian	4,131,270	4,028,284	2,741,387	2,101,024	5,543,426
Shark	400,460	423,207	487,032	458,516	501,376
Snapper	864,436	1,060,073	2,340,263	1,985,137	1,072,141
Tailor	139,153	137,292	150,088	128,798	187,249
Trevally, Silver (Skipjack)	123,913	194,098	82,096	104,657	59,306
Whiting, Sand and School	453,269	396,663	460,667	444,108	505,678
Whiting, King George	131,777	91,330	66,867	76,809	63,792
Other Species	87,010	259,039	423,582	(*b*) 834,244	(*b*) 346,877
Total	9,815,635	10,297,486	10,526,257	10,122,342	11,818,955
GRAND TOTAL	23,324,939	27,938,083	30,278,199	28,296,047	31,888,933

(*a*) Estimated live weight. (*b*) Includes turtles.

The large catches of Australian salmon (*Arripis trutta*), which school in the bays on the south and lower south-western coasts, yield a large proportion of the production of inshore and beach fishing and are used almost exclusively for canning. The remainder of the catch from this type of fishing comprises chiefly tailor (*Pomatomus pedica*), sea herring or ruff (*Arripis georgianus*), transparent whiting (*Sillago bassensis*), sand whiting (*Sillago schomburgkii*), sea mullet (*Mugil cephalus*) and trevally or skipjack (*Usacaranx georgianus*). This is sold mainly as wet fish on the local market, but large quantities of sea herring are canned and there are some exports, principally of whiting, to the other Australian States.

Hand-lines and traps are used to catch snapper (*Chrysophrys auratus*) during the northern schooling season, from May to August, in the coastal waters from the Murchison River to North West Cape. The same area also yields heavy catches of Westralian jewfish (*Glaucosoma hebraicum*) and smaller quantities of cod and groper. Other areas as far south as Cape Naturaliste are fished by hand-line, jewfish being the principal catch.

The first fishing grounds to be exploited were the estuaries and rivers and, although they are not now as important as other grounds, they still provide substantial quantities of fish of a fairly wide variety. The principal species are cobbler (*Cnidoglanis macrocephalus*) and yellow-eye mullet (*Aldrichetta forsteri*), most of which are caught in the estuaries of the Murray, Serpentine, Harvey and Swan Rivers. Other species include garfish (*Hemirhamphus regularis* and *H. melanochir*), Perth herring or gizzard shad (*Fluvialosa vlaminghi*), sea mullet, tailor, sand whiting, King George whiting (*Sillaginodes punctatus*), and flathead. Crabs (*Portunus pelagicus*), king prawns (*Penaeus latisulcatus*) and other prawns are also caught commercially.

There are no indigenous inland or freshwater fish of commercial value. A small crustacean, the marron (*Cherax tenuimanus*), occurs in the streams of the lower south-west. Brown trout, rainbow trout and English perch have been introduced into the streams of the southern districts.

Research work on crayfish, Australian salmon, prawns, tuna and whales in Western Australian marine waters is being carried out by the Commonwealth Scientific and Industrial Research Organization in association with other Commonwealth and State Government authorities. Reference to these activities is made in Chapter V, Part 2.

GENERAL FISHERIES

As at 31st December	Boats Licensed	Value of Boats and Equipment	Fishermen Licensed (a)	Year ended 30th June	Production			
					Crayfish		Other Fish (b)	
					Quantity (c)	Value	Quantity (d)	Value
	No.	£	No.		cwt.	£	cwt.	£
1952	544	795,497	996	1952 (e)	75,138	841,543	65,795	412,938
1953	600	1,055,232	1,125	1954	82,353	922,353	90,002	473,551
1954	616	1,245,461	1,069	1955	97,380	1,090,656	83,942	510,200
1955	687	1,413,573	1,159	1956	94,014	1,228,446	87,268	580,904
1956	706	1,562,130	1,285	1957	96,099	1,355,388	85,347	577,512
1957	812	1,858,545	1,348	1958	118,994	1,721,441	87,459	632,619
1958	871	2,155,648	1,503	1959	156,400	2,299,087	90,302	667,919
1959	960	2,601,462	1,673	1960	174,513	3,013,255	*91,562	609,907
1960	1,053	3,440,405	1,923	1961	160,886	3,003,201	84,681	599,975
1961	1,119	3,710,528	2,039	1962	176,536	4,093,000	104,075	666,497

(a) Comprises employees and working proprietors. (b) Excludes oysters, crabs, prawns and scallops. (c) Live weight of whole crayfish. (d) Estimated live weight except in 1952 and 1953–54 when " reported " weights are shown. (e) Year ended 31st December. * Revised.

Whaling (1)

Whaling has been conducted along the Western Australian coast from the first years of settlement and whale oil and whale bone were among the earliest exports from the Colony. Activity since then has fluctuated widely and at times ceased altogether. The latest large-scale revival of the industry began in 1949.

The whales which pass northward along the western coast from about May and return south by the end of October are predominantly humpbacks. These are protected from undue depletion of numbers by the fixing of an annual quota of kills for each operator, under the procedure laid down by the International Whaling Commission. In 1955 a company operating from Albany extended its activities to include the taking of sperm whales, which are not subject to restriction and in 1962 operations at Carnarvon were also extended to sperm whaling.

The information shown in the following table, which covers each of the years from 1953 to 1962, has been supplied by the State Fisheries Department. It does not include particulars of sperm whales taken.

HUMPBACK WHALING

Season	Whales Taken			Whale Products			
	Number (a)	Average Length (b)		Oil (c)		Meal	Solubles
		Males	Females	Total	Average per Whale		
		feet	feet	barrels	barrels	tons	tons
1953	1,300	39·1	40·7	66,000	50·7	3,200	1,811
1954	1,320	38·8	40·5	62,995	47·7	3,312	1,497
1955	1,120	39·9	41·8	54,532	48·7	2,708	1,002
1956	1,121	40·3	42·3	55,996	50·0	3,193	1,952
1957	1,120	39·8	41·6	56,534	50·5	3,008	1,910
1958	972	39·3	41·1	48,885	50·3	2,877	1,968
1959	714	37·9	39·8	32,884	46·1	1,916	1,150
1960	547	38·0	39·7	25,754	47·1	1,432	1,128
1961	582	37·0	38·3	26,893	46·2	1,361	925
1962	543	37·9	39·0	23,286	42·9	1,243	1,245

(a) Includes one fin whale in 1956, two blue and three bryde whales in 1958, one fin, one sperm and 12 blue whales in 1959, two blue whales in 1960, and two bryde whales in 1961. (b) Whales mentioned in note (a) have not been taken into account in calculating average lengths. (c) 6 barrels = 1 ton (approximately).

Pearl-shell Fishing

Pearl and pearl-shell fishing has been a valuable industry for many years, the main centre being Broome. The pearls obtained were once an important feature of production but the success of the industry now depends almost entirely on the shell produced and the price obtainable for it. Activities

(1) See *Appendix.*

were suspended after the outbreak of war with Japan, when valuable luggers and equipment were lost. Following the war recovery was slow, because of a shortage of suitable boats and of experienced divers, until 1953 when the rate of progress quickened after the services of trained Japanese divers again became available. By 1957 production of shell had reached the pre-war level of about 1,000 tons but with a depressed market in 1958 it fell to 753 tons. Except for a slight recovery in 1960, there has been a decline in production in each year since 1959 and in 1962 the total quantity of shell raised was only 349 tons.

PEARL AND PEARL-SHELL FISHERIES
(Excluding Culture Pearls)

Year	Vessels			Number of Persons Employed									Pearl-shell Produced		Value of Pearls	
						Asians										
	No.	Total Tonnage	Value (including Equipment)	Europeans	Australian Aboriginals	Chinese	Japanese	Koepangers	Malays	Filipinos	Others	Total Asians	Total	Quantity	Value	
			£											tons	£	£
1953	27	459	84,350	17	65	46	38	37	70	2		193	275	447	284,503	2,025
1954	30	525	147,100	12	78	72	39	30	80	1	2	224	314	558	355,555	2,294
1955	36	740	209,600	23	68	57	109	33	80	1		280	371	652	413,277	3,075
1956	42	907	251,000	24	98	83	106	28	121	4		342	464	898	583,577	7,200
1957	48	1,100	265,040	23	80	110	117	31	119	2		379	482	990	604,801	9,893
1958	42	987	218,500	17	64	102	116	27	93			338	419	753	347,915	20,869
1959	29	739	180,289	14	55	74	96	15	54		4	243	312	508	286,704	6,970
1960	27	675	151,200	12	61	53	101	9	64		2	229	302	567	269,786	7,210
1961	17	449	82,500	9	27	13	74	6	56		2	151	187	358	155,680	4,300
1962	16	424	74,000	10	35	6	68	4	48			126	171	349	156,074	4,105

Pearl Culture

In 1956 a lease was granted to a company to grow culture pearls at Kuri Bay in Brecknock Harbour, 130 miles north-east of Derby. A small initial harvest of pearls was gathered in 1957 and significant quantities were harvested in each year from 1958 to 1962 and marketed overseas. Other licences have since been issued for the establishment of pearl culture farms, in King Sound and at Exmouth Gulf near Giralia Landing, which, however, have not yet reached the stage of commercial production. Figures in the above table do not include details of culture pearl production.

MINING AND QUARRYING

The development of mining as a major industry in Western Australia began with the discovery of gold in the Kimberley in 1885, although some forty years earlier coal had been found at the Irwin River and copper and lead in the Northampton district. The impetus given to prospecting by the Kimberley finds led to other gold strikes between 1887 and 1891 and the rich discoveries at Coolgardie in 1892 and at Kalgoorlie in 1893. Although gold is not now mined in quantities approaching the peak-year production of more than two million ounces in 1903, it nevertheless accounts for about three-fifths of the total value of mine and quarry products.

The mining industry, for so long paramount in the Western Australian economy, is now far surpassed in importance by agriculture and grazing but is still of considerable significance and contributes about one-seventh of the gross value of all primary production. The mineral resources of the State are extremely varied in character and are widely distributed geographically. Extensive exploratory work carried out as a result of wartime demands proved the existence of a number of important minerals, some of which are now being produced commercially. The geology of the State is described in Chapter II, Part 1—*Physical Features and Geology*, and reference is made there to the occurrence of mineral deposits.

The following table gives details of mine and quarry production during the calendar years 1960 to 1962.



SALMON FISHING ON THE SOUTH COAST

(See letterpress on page 286)



RECORDED MINE AND QUARRY PRODUCTION

Item	1960		1961		1962	
	Quantity	Value	Quantity	Value	Quantity	Value
	fine oz.	£	fine oz.	£	fine oz.	£
Gold (*a*)	869,966	14,291,902	870,658	14,273,649	860,039	14,067,790
Silver (*b*)	190,386	79,240	201,491	84,055	213,987	101,331
	tons		tons		tons	
Asbestos—						
Crocidolite	12,922	1,418,767	14,087	1,532,540	15,617	1,691,933
Chrysotile	61	1,602	156	2,629	52	1,103
Barytes					494	3,116
Beryl	181	33,024	261	40,079	195	32,452
			lb.		lb.	
Bismuth			911	371	181	40
			tons		tons	
Clays—all kinds (*c*)	*464,074	267,983	530,603	221,678	488,743	224,132
Coal	922,393	2,439,195	765,740	1,680,259	919,112	1,980,778
Copper Ore	3,584	201,783	6,290	325,696	5,277	207,383
Cupreous Ore (*d*)	7,727	140,252	7,384	157,488	9,275	94,569
Felspar	1,942	8,283	1,190	5,210	1,267	6,884
Glass Sand	8,637	6,102	8,215	5,861	10,326	7,708
Glauconite	111	5,550				
Gypsum	44,216	55,628	45,145	62,844	51,650	87,879
Ilmenite Concentrates	105,283	458,319	163,849	735,424	174,579	793,359
Iron Ore	928,463	972,293	1,359,548	1,383,897	1,403,752	1,434,738
Lead and Silver-lead Ore and Concentrates	2,264	119,842	597	25,883	443	15,251
Leucoxene Concentrates	89	1,505	535	7,606	627	8,916
Limestone and Shell (including road-making stone but excluding building stone)	557,022	181,818	515,576	202,696	762,108	386,960
Magnesite			9,625	64,977	224	1,593
Manganese Ore	53,842	740,130	83,660	1,070,695	67,871	894,879
Monazite Concentrates	242	9,319	1,255	33,322	600	19,036
Ochre	104	1,040	294	1,770		
Pyritic Ore and Concentrates	53,299	366,739	52,397	427,622	49,461	424,190
Rutile Concentrates	515	12,816	916	19,696	523	12,383
Stone, Building and Monumental—Sandstone, Limestone, Granite, etc.	112,110	143,127	131,046	182,808	127,971	157,939
Stone, Crushed and Broken (*e*)—Granite, Diorite, Quartzite, Basalt	755,172	1,262,012	763,155	1,281,998	930,891	1,494,380
Talc	5,470	69,114	5,149	64,581	4,981	71,810
	lb.		lb.		lb.	
Tantalite Concentrates (including Tantalite-Columbite)	23,677	16,982	31,808	22,917	43,098	58,874
	tons		tons		tons	
Tin Ore and Concentrates	281	168,775	341	235,580	465	334,269
Tungsten Ores and Concentrates—Scheelite					7	3,883
Zircon Concentrates	4,018	41,471	7,361	74,266	3,731	40,023
Other (Value only)		36,811		39,424		48,111
Total Value		23,551,424		24,267,521		24,707,692

(*a*) Values are in terms of Australian currency, including amounts realized by the Gold Producers' Association Ltd. on sales of Western Australian gold—in 1960, £433; in 1961, £84,313; in 1962, £8,104. They also include Commonwealth net subsidy paid to gold producers—in 1960, £698,242; in 1961, £585,306; in 1962, £621,573. (*b*) By-product from treatment of auriferous ore and excludes silver contained in silver-lead and copper ores and concentrates exported, for which see table on page 292. (*c*) Includes production of bauxite and bentonite. (*d*) For fertilizer. (*e*) Excluding limestone. * Revised.

During the war years employment in mining and quarrying decreased considerably and, although some recovery occurred after 1945, the number of men engaged in 1962 was only 7,539 or less than one-half of the 1939 work force of 16,530. This decline in employment was, however, largely confined to the gold-mining industry and further comment on it appears on page 291.

MEN WORKING AT MINES AND QUARRIES

Description	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
Gold Mining (*a*)	6,359	6,128	5,845	5,628	5,385	5,352	5,273	4,992	4,945	4,963
Coal Mining	1,463	1,560	1,386	1,219	1,136	1,072	1,011	984	582	757
Other Mining and Quarrying	1,304	1,186	1,161	1,187	1,349	1,321	1,638	1,698	1,866	1,819
Total	9,126	8,874	8,392	8,034	7,870	7,745	7,922	7,674	7,393	7,539

(*a*) Includes alluvial diggers.

The mining laws of the State have been designed to encourage as well as to control activity in the industry. This policy and the experience of other countries were given due consideration in framing them and they are regarded as equitable and offering all reasonable incentives to mining development. The various tenures are described in detail in Chapter VII, Part 1—*Land Tenure and Settlement.*

Gold

Although specimens of gold had been found in earlier years at several places in the Colony, it was first discovered in payable quantities in the Kimberley in 1885. This find led to widespread prospecting activity, resulting in further gold strikes between 1887 and 1891 in the Yilgarn, Pilbara, Ashburton and Murchison districts. These were followed by spectacular discoveries in 1892 at Coolgardie and in 1893 at Kalgoorlie where the famous Golden Mile, which is still the State's most productive field, was developed. By 1900 all the present proclaimed goldfields, ranging from Kimberley in the north to Phillips River in the south, had been opened up.

The production of each of these fields, as reported to the Mines Department, for each year from 1953 to 1962 is shown in the following table.

MINE PRODUCTION OF GOLD (‡) CLASSIFIED ACCORDING TO GOLDFIELD

(fine ounces)

Goldfield	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
Kimberley	238	83	192	179	68	50	38	18	16	31
Pilbara	7,973	2,801	3,874	2,074	785	1,004	1,071	2,944	4,639	1,603
West Pilbara	4	11	29	1	57	15	11	5	4	9
Ashburton	84	89	19	1	1			1		
Gascoyne		21				6	43	141	452	274
Peak Hill	9,014	8,683	112	16	260	638	436	501	330	269
East Murchison	1,199	347	134	272	206	817	732	381	373	353
Murchison	101,030	135,214	89,146	85,914	85,627	81,984	95,361	91,970	91,877	94,679
Yalgoo	423		12		112	9	61	1	85	153
Mount Margaret	29,140	28,413	28,671	29,851	32,519	31,010	34,192	34,106	33,977	27,186
North Coolgardie	36,459	34,531	35,918	27,646	23,525	21,027	22,458	20,250	15,849	17,567
Broad Arrow	2,550	2,847	2,735	1,957	2,928	2,385	1,663	1,543	2,455	935
North-East Coolgardie	384	213	369	105	115	322	385	141	161	138
East Coolgardie	484,949	486,040	489,040	474,590	510,830	529,768	510,382	531,981	540,473	526,478
Coolgardie	19,601	18,743	21,590	17,839	19,267	14,867	17,393	12,342	13,834	11,888
Yilgarn	55,630	60,340	66,710	84,090	80,995	81,740	73,302	70,689	64,301	65,138
Dundas	74,135	83,425	95,718	89,069	92,071	108,331	101,643	101,555	98,890	110,252
Phillips River	479	76	3	1	359	812	1,366	1,331	2,720	2,987
Outside Proclaimed Goldfields	39	115	54	12	16	34	432	66	222	99
Total	823,331	861,992	834,326	813,617	849,741	874,819	860,969	869,966	870,658	860,039

(‡) As reported to the Mines Department.

Production reached a maximum of 2,064,800 fine ounces in 1903 but there followed a gradual and continuous decline, due mainly to exhaustion of surface deposits, until in 1929 the yield was only 377,176 fine ounces. In succeeding years various economic factors stimulated activity in the industry and there was a well-maintained improvement until 1939 when production reached 1,214,238 fine ounces. The second World War brought about a decline which was accelerated by the outbreak of hostilities with Japan, gold mining being one of the first industries to be affected by the introduction early in 1942 of a rigid system of manpower control. Although output has not reached pre-war level it has increased considerably in recent years, and in 1962 gold mines reported a total yield of 860,039 fine ounces.

The figures given in the following table relate to refinery production and comprise gold refined at the Mint and gold contained in gold-bearing materials exported. Particulars for individual years do not agree with those for mine production, quoted in the preceding tables, because of the delay between production at the mine and refining at the Mint. Values are in Australian currency and include amounts, totalling £1,296,623 for the years 1952 to 1962, distributed by the Gold Producers' Association Ltd. from premiums on sales of Western Australian gold. Values also include net subsidy payments to gold producers made by the Commonwealth Government under the provisions of the Gold-Mining Industry Assistance Act 1954–1962. This assistance to the industry in Western Australia amounted to £4,389,437 in the years 1955 to 1962. In 1962 the Commonwealth Parliament passed the Gold Mines Development Assistance Act which is intended to increase the rate of gold-mining developmental work by providing assistance, in certain circumstances, to mines not receiving subsidy under the Gold-Mining Industry Assistance Act.

It will be seen that refinery production of gold from 1886 to 1962 amounted to 63·4 million fine ounces. The total value was £475·2 million but it should be noted that this figure has been derived by the aggregation of annual valuations made at prices *current at the time of production*, which ranged between £4 4s. 11·45d. per fine ounce in 1886 and £15 12s. 6d. per fine ounce in 1962, and the addition of premiums paid by the Gold Producers' Association Ltd. and of government subsidies.

REFINERY PRODUCTION OF GOLD FROM 1886

Period	Quantity			Value
	Refined Outside the State (*a*)	Refined at Perth Mint	Total	
	fine oz.	fine oz.	fine oz.	£
Prior to 1953	11,555,868	43,264,328	54,820,196	336,671,565
1953	5,396	818,516	823,912	13,299,092
1954	3,089	847,451	850,540	13,313,618
1955	4,091	837,914	842,005	13,374,688
1956	2,331	810,049	812,380	13,202,400
1957	2,043	894,638	896,681	14,550,893
1958	1,810	865,378	867,188	14,178,328
1959	2,322	864,287	866,609	14,194,195
1960	2,069	853,690	855,759	14,069,903
1961	2,943	868,902	871,845	14,292,196
1962	4,538	854,830	859,368	14,057,303
From 1886 to 31st December, 1962	11,586,500	51,779,983	63,366,483	475,204,181

(*a*) Comprises gold in ores and concentrates exported.

Except for minor fluctuations, a general increase has occurred in the quantity of ore treated annually since the war. This has been achieved with a decreasing work force by the introduction of new methods and improved tools and machinery, the number of men employed (including alluvial diggers) having declined from 6,961 in 1946 to 4,963 in 1962 while, in the same period, the amount of ore treated rose from 2,194,477 to 2,989,653 tons.

The Department of Mines operates batteries for the treatment of ore which is mined by prospectors or other small producers and various concessions are made in order to encourage work which is exploratory or too limited in extent to warrant the installation of major plant. Figures for the State Batteries are included in the following table.

GOLD MINING—SUMMARY OF OPERATIONS (*a*)

Year	Leases in Force at end of Year (*b*)		Gold-mining Machinery in use at end of Year					Total Value of Gold-mining Machinery	Ore Treated	Effective (‡) Workers Employed at Mines		Alluvial Diggers
			Batteries		Other Crushing Mills	Cyaniding						
	Leases	Area	Number	Head of Stamps		Leaching and Agitating Vats	Vacuum Filters and Presses			Above Ground	Under Ground	
	No.	acres		No.	No.	No.	No.	£	tons	No.	No.	No.
1953	1,360	25,454	66	466	442	343	105	6,839,946	3,169,875	3,208	3,121	30
1954	1,360	25,283	65	462	373	316	80	6,966,213	3,240,378	3,080	3,019	29
1955	1,284	23,732	54	396	327	269	86	6,428,883	2,865,048	2,910	2,912	23
1956	1,190	21,739	50	376	317	262	79	6,896,794	2,870,273	2,694	2,918	16
1957	1,168	21,265	53	346	201	255	60	7,021,355	2,951,011	2,568	2,804	13
1958	1,131	20,777	49	326	184	231	62	7,270,143	3,021,072	2,499	2,840	13
1959	1,129	20,799	50	351	179	202	57	7,661,961	2,959,202	2,481	2,780	12
1960	1,051	19,306	50	324	178	219	63	7,969,767	3,056,445	2,394	2,586	12
1961	1,026	18,756	43	255	190	195	66	7,897,663	2,984,458	2,388	2,541	16
1962	983	18,025	44	262	173	199	66	8,646,870	2,989,653	2,388	2,552	23

(*a*) Includes Government Batteries. (*b*) Includes leases taken up on private property. (‡) Excludes workers on sick, accident, annual and long service leave. Figures represent average over whole year.

Silver

Western Australia has produced over 10 million ounces of silver, by far the greater part of it as a by-product in the recovery of gold, the average silver content of the gold bullion submitted for refining being about 18 per cent. The other silver production is from silver-lead and copper ores and concentrates exported for treatment outside the State.

PRODUCTION OF SILVER

Year	From Treatment of Auriferous Ore		Silver Content of Silver-lead and Copper Ores and Concentrates Exported		Year	From Treatment of Auriferous Ore		Silver Content of Silver-lead and Copper Ores and Concentrates Exported	
	Quantity	Value	Quantity	Value		Quantity	Value	Quantity	Value
	fine oz.	£	fine oz.	£		fine oz.	£	fine oz.	£
1953	214,766	84,618	14,598	4,783	1958	195,975	77,771	4,792	1,880
1954	222,446	85,433	5,931	1,500	1959	183,850	76,031	9,711	3,882
1955	232,667	91,642	3,128	1,139	1960	190,386	79,240	*6,370	2,594
1956	207,478	88,274	9,769	2,699	1961	201,491	84,055	8,156	3,315
1957	188,204	74,170	8,910	3,521	1962	213,987	101,331	4,379	2,079

* Revised.

Asbestos

Several types of asbestos occur in the State but only two have been produced in significant quantities. Blue asbestos (crocidolite) is mined at Wittenoom Gorge in the West Pilbara district and, in 1962, production was 15,617 tons, valued at £1,691,933. The production of chrysotile, which occurs at a number of places in the Pilbara and West Pilbara districts, was only 52 tons in 1962, valued at £1,103.

PRODUCTION OF ASBESTOS

Year	Crocidolite		Chrysotile		Total	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	£	tons	£	tons	£
1953	3,795	641,595	606	65,769	4,401	707,364
1954	3,794	542,203	303	13,474	4,097	555,677
1955	4,487	486,032	275	15,997	4,762	502,029
1956	7,286	800,710	761	25,366	8,047	826,076
1957	11,105	1,195,634	1,389	42,067	12,494	1,237,701
1958	11,887	1,304,724	1,378	38,652	13,265	1,343,376
1959	14,680	1,611,293	632	17,249	15,312	1,628,542
1960	12,922	1,418,767	61	1,602	12,983	1,420,369
1961	14,087	1,532,540	156	2,629	14,243	1,535,169
1962	15,617	1,691,933	52	1,103	15,669	1,693,036

Bauxite

Following a survey of bauxite deposits, which occur over a large area in the Darling Range, trial shipments of bauxite totalling 36,741 tons were sent to Tasmania and Japan in 1959 and 1960. In 1961 the Alumina Refinery Agreement Act was passed by the State Parliament ratifying an agreement between the Government and Western Aluminium No Liability for the construction of a refinery at Kwinana to produce alumina from bauxite mined in the Darling Range and for the export of bauxite. A summary of the main provisions of the Act appears on page 104. The refinery commenced production of alumina towards the end of 1963. The alumina is shipped to Victoria and Japan for reduction to aluminium. In 1962 temporary prospecting reserves covering 4,638 square miles in the South-West were granted to two other mining companies to search for bauxite.

Beryllium Ore

Beryl occurs in many localities throughout the State but is obtained mainly from the Pilbara and Gascoyne districts. Production was negligible until, as a result of the wartime demand for beryllium-copper alloys, 548 tons were produced in 1943 and 387 tons in 1944. It then declined but later recovered to some extent, reaching a post-war peak of 350 tons in 1957. Production subsequently fluctuated considerably, and in 1962 was 195 tons.

PRODUCTION OF BERYL

Item	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
Quantity (tons)	125	132	199	310	350	170	267	181	261	195
Value (£)	22,223	22,607	34,430	57,113	64,234	31,801	48,052	33,024	40,079	32,452

Coal

The first reports of coal discoveries, in the Murray district and on the Irwin River, were made in 1846 but the only commercial production in Western Australia occurs at Collie where the Collie River Coal Mining District was proclaimed in 1896. The coal is sub-bituminous in rank and there are substantial reserves in the area.

Annual production exceeded one million tons for the first time in 1954, but in 1956 it fell to 830,007 tons. It increased in each of the next four years and in 1960 production totalled 922,393 tons. A major producer closed its mines on the termination in December, 1960 of its contract for the supply of coal to the State Government, and production declined to 765,740 tons in 1961. There was a substantial recovery in 1962, when 919,112 tons were produced.

Open-cut mining was commenced at Collie in 1943 and the amount produced by this means increased rapidly until in 1952 almost one-half of the total production came from open cuts. In each year from 1953 to 1960 the proportion of open-cut coal was less than in 1952, and in 1960 was little more than one-eighth of all coal produced. New contracts for government requirements, which came into operation at the beginning of 1961, provided for an increase in supplies from open-cuts, and in 1961 and 1962 more than one-third of the annual production came from that source.

COAL PRODUCTION

Year	Quantity			Value
	From Deep Mines	From Open Cuts	Total	
	tons	tons	tons	£
1953	493,035	393,147	886,182	3,073,073
1954	607,727	410,616	1,018,343	3,588,818
1955	599,662	304,130	903,792	3,089,311
1956	621,465	208,542	830,007	2,723,981
1957	689,882	148,779	838,661	2,552,657
1958	779,396	91,486	870,882	2,280,649
1959	800,856	110,579	911,435	2,356,534
1960	798,184	124,209	922,393	2,439,195
1961	506,306	259,434	765,740	1,680,259
1962	598,501	320,611	919,112	1,980,778

For some years after the war, employment in coal mining rose steadily and reached 1,560 in 1954. It then declined and in 1960 had fallen to 984. There was a sharp decrease in 1961 when the total was only 582, of whom one-third were employed above ground compared with about one-fifth in each of the three previous years. In 1962 employment increased to 757, the proportion of those working above ground remaining at about one-third.

MEN WORKING AT COAL MINES

Description	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
Above Ground	647	708	582	443	377	230	207	206	198	257
Under Ground	816	852	804	776	759	842	804	778	384	500
Total	1,463	1,560	1,386	1,219	1,136	1,072	1,011	984	582	757

Copper Ore

Copper ore in commercial quantities was discovered in 1849 in the Northampton district. High-grade ore was found in 1855 at Bowes River in the same area and in 1872 one of the richest deposits was discovered in the West Pilbara near Roebourne. Considerable quantities of copper have been pro-

duced at the mines in the Northampton district, where it occurs in association with lead, and also in the Ravensthorpe area, in association with gold. Another important producer has been the Murrin Murrin district in the Mount Margaret area.

Due to low prices, rising costs of mining and treatment and the exhaustion of rich secondary ores near the surface, production was on a very small scale between 1925 and 1956. It has since increased substantially, however, and in 1962 amounted to 5,277 tons valued at £207,383.

PRODUCTION OF COPPER ORE (*a*)

(*For Smelting to Copper*)

Item	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
Quantity (tons)	50		12	212	1,804	1,802	4,409	3,584	6,290	5,277
Value (£)	3,302		1,021	12,891	60,011	55,597	233,534	201,783	325,696	207,383

(*a*) For production of cupreous ore for fertilizer see following section.

Cupreous Ore (For Fertilizer)

Until recent years, the production of ores having a copper content of less than 10 per cent. was uneconomical because of high costs of transport and smelting. The demand for copper to remedy trace element deficiencies in soils has, however, created a market for low-grade ores for use in chemical fertilizers. Production for this purpose commenced in 1947, and in 1962 the output was 9,275 tons, valued at £94,569. The Pilbara, Peak Hill, Murchison and Yalgoo areas are the principal sources of supply.

PRODUCTION OF CUPREOUS ORE FOR FERTILIZER

Item	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
Quantity (tons)	1,948	4,748	7,731	7,713	4,639	7,644	11,859	7,727	7,384	9,275
Value (£)	21,004	50,381	101,731	113,442	82,127	114,670	184,006	140,252	157,488	94,569

Ilmenite, Leucoxene, Monazite, Rutile and Zircon

Although beach sands being treated near Bunbury, Busselton and Capel also contain leucoxene, monazite, rutile and zircon, the ilmenite content is of particular importance because, unlike that from deposits being worked elsewhere in Australia, it is virtually chrome-free and little difficulty is experienced in producing a concentrate of high quality. After 1956, when recorded production of ilmenite concentrates was 3,293 tons valued at £15,150, output rose rapidly and 174,579 tons valued at £793,359 were produced in 1962.

PRODUCTION OF ILMENITE CONCENTRATES

Item	1956	1957	1958	1959	1960	1961	1962
Quantity (tons)	3,293	70,029	69,817	83,347	105,283	163,849	174,579
Value (£)	15,150	412,469	358,359	345,860	458,319	735,424	793,359

Concentrates containing leucoxene, monazite, rutile and zircon are recovered as by-products from the treatment of the beach sands and the first shipments were made in 1958, when 513 tons of concentrates valued at £16,759 were exported. In 1962 recorded production totalled 5,481 tons valued at £80,358.

PRODUCTION OF LEUCOXENE, MONAZITE, RUTILE AND ZIRCON CONCENTRATES

Concentrate	1958		1959		1960		1961		1962	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	tons	£	tons	£	tons	£	tons	£	tons	£
Leucoxene			276	3,930	89	1,505	535	7,606	627	8,916
Monazite	110	7,211	90	6,000	242	9,319	1,255	33,322	600	19,036
Rutile....	297	8,423	100	2,765	515	12,816	916	19,696	523	12,383
Zircon	106	1,125	6,787	71,691	4,018	41,471	7,361	74,266	3,731	40,023

Iron

Iron-ore deposits are widely distributed throughout Western Australia, but until comparatively recent years there was very little development, due to the absence of smelting works in the State and the high cost of transporting ore to distant markets. Since 1951, however, large quantities of hematite have been produced at Cockatoo Island (Yampi Sound) in the West Kimberley district for shipment to the other Australian States. These deposits, together with those of the adjacent Koolan Island, are of considerable magnitude and consist of high-grade ore. Development work is now in progress to exploit the deposits on Koolan Island.

Pig-iron was produced for the first time in Western Australia in 1948. It was smelted at Wundowie in the Darling Range east of Perth from brown iron ore (limonite) mined in the vicinity and using charcoal produced from local eucalypts. More recently ore obtained from Koolyanobbing, east of Bullfinch in the Yilgarn district, has replaced the Wundowie limonite in the smelting process. The extensive deposits in the Koolyanobbing area are mainly high-grade hematite ores with some limonite. The production of pig-iron at Wundowie for each of the five years in the period ended 30th June, 1962 is shown on page 313.

PRODUCTION OF IRON ORE

Item	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
Quantity (tons)	707,383	651,744	528,630	336,890	416,236	572,928	727,084	928,463	1,359,548	1,403,752
Value (£)	709,655	654,323	540,363	337,536	428,870	591,204	755,725	972,293	1,383,897	1,434,738

There have recently been a number of developments in connexion with iron-ore deposits which, it is anticipated, will lead to greatly expanded production. An agreement relating to the establishment of an integrated iron and steel works in Western Australia, made by the Government with the Broken Hill Proprietary Company Limited and ratified in 1960 by the State Parliament, contains provisions for the extension of iron-ore mining in the Yilgarn district. The announcement in December, 1960 of the Commonwealth Government's decision to modify its embargo on oversea exports, which had been in force since 1938, caused increased interest in Western Australian deposits. The subdivision of the deposits (other than those reserved for the domestic iron and steel industry under the Commonwealth's revised export policy) into three categories was announced by the State Government in March, 1961. The first category includes known high-grade deposits, not covered by lease agreements, which are to be retained by the Crown to ensure supplies for the State's steel requirements or for export. The second category, being known medium and low-grade deposits, and the third category, comprising deposits as yet undiscovered, may be made the subject of temporary reservations granting the right to explore, each such reservation being limited to a maximum area of 50 square miles. Following this announcement, the State Government in July, 1961 granted 87 temporary reserves with exclusive rights to prospect for iron ore for a period of two years, the total area involved being 4,130 square miles. During the 1961 session the State Parliament ratified agreements between the Government and two mining companies. The Iron Ore (Scott River) Agreement Act relates to an arrangement made with Mineral Mining and Exports (W.A.) Pty. Ltd. for the establishment of an industry to process iron ore in the Scott River area near Augusta in the extreme south-west of the State, and the Iron Ore (Tallering Peak) Agreement Act incorporates an agreement with Western Mining Corporation Limited for the mining and export of iron ore from the Tallering Peak area about 75 miles north-east of the port of Geraldton. In November, 1961 the Minister for National Development disclosed the existence of extensive deposits in the Pilbara. In 1962 Parliament passed the Iron Ore (Mount Goldsworthy) Agreement Act which ratifies an agreement

between the State Government and a group of companies for the mining, transport and shipment of iron ore from the Mount Goldsworthy deposits situated approximately 62 miles east of Port Hedland. Reference to the main provisions of these Acts will be found on pages 106 and 110. The Iron Ore (Hamersley Range) Agreement Act, 1963 contains an agreement between the State Government and Hamersley Iron Pty. Limited for the mining and export of iron ore from deposits in the Hamersley Range, for the secondary processing of the ore as a later development and, ultimately, for the establishment of an integrated iron and steel industry.

Lead Ore

Lead ore was discovered near the lower Murchison River in 1848, at what became known as the Geraldine Mine. It has since been found in other localities, principally in the Pilbara, Ashburton and West Kimberley districts, and half a million tons have been raised, the great bulk of it from the mineral field around Northampton, the area of the first finds. Production fluctuated very widely and almost ceased entirely during the war, but a substantial increase occurred in the post-war years and in 1956 it rose to 7,613 tons. Since then the downward trend in world prices has adversely affected production and in 1962 only 443 tons of lead and silver-lead ores were mined.

Although the ore from the Northampton field, the principal producer, is almost free from silver, that from other areas further north, notably the Ashburton and Pilbara, has a silver content which may be as much as ten ounces per ton. Production of such ores is included in the following table.

PRODUCTION OF LEAD AND SILVER-LEAD ORES AND CONCENTRATES

Item	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
Quantity (tons)	6,425	2,167	1,416	7,613	4,180	2,493	1,903	2,264	597	443
Value (£)	364,384	102,683	96,311	645,804	316,465	139,899	89,430	119,842	25,883	15,251

Manganese Ore

Deposits of manganese ore occur in several parts of the State but up to the end of 1947 only 252 tons had been mined. After 1947 production increased rapidly and in 1961 totalled 83,660 tons valued at £1,070,695. In 1962 it fell to 67,871 tons valued at £894,879. Deposits at a number of centres in the Peak Hill, Marble Bar and Nullagine districts are being worked at present.

PRODUCTION OF MANGANESE ORE

Item	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
Quantity (tons)	16,324	40,581	44,194	56,234	73,191	47,543	75,733	53,842	83,660	67,871
Value (£)	150,991	608,215	497,588	737,569	1,162,402	694,356	1,055,673	740,130	1,070,695	894,879

Pyrites

The mining of iron pyrites was developed during the war to provide a substitute for oversea supplies of sulphur required for the manufacture of sulphuric acid for superphosphate. Production at Norseman, which is the principal source of supply, commenced in 1942. All ore is now concentrated at the mine before being railed to superphosphate works in the metropolitan area for extraction of the sulphur. A second source of supply was developed in 1956 when a metropolitan works commenced using concentrates from a gold mine at Kalgoorlie. Gold is obtained as a by-product following the extraction of the sulphur from these concentrates.

PRODUCTION OF IRON PYRITES (ORE AND CONCENTRATES)

Item	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
Quantity (tons)	59,248	56,150	49,485	60,969	57,918	49,389	53,030	53,299	52,397	49,461
Value (£)	489,985	441,466	397,269	420,052	382,567	351,847	371,989	366,739	427,622	424,190

Tin Ore

Tin ore was first discovered at Greenbushes in 1888. It has since been found at several other places, but the Greenbushes and Pilbara fields have been the only major producers. Output declined during the war but increased substantially after 1949 and reached a peak in 1956 when 358 tons of ore and con-

centrates valued at £208,273 were produced. In 1958 it declined to 138 tons valued at £77,319, the decrease being due mainly to contraction of operations in the Greenbushes field. After 1958 production again increased and in 1962 total output was 465 tons valued at £334,269.

PRODUCTION OF TIN ORE AND CONCENTRATES

Item	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
Quantity (tons)	113	121	180	358	270	138	250	281	341	465
Value (£)	63,129	62,976	94,912	208,273	155,079	77,319	154,729	168,775	235,580	334,269

Other Minerals

In addition to the other minerals listed in the table on page 289 there are some which have a high potential value but are not produced in large quantities at present. Zinc is associated with many of the silver-lead ores and some of the copper ores and has been mined as the carbonate with a zinc content of 38 per cent. Arsenious oxide and antimonial concentrates were produced commercially for some years as by-products in the treatment of auriferous ores. Small amounts of bismuth concentrates assaying as high as 73 per cent. bismuth have also been produced. Production of tantalum ores and concentrates has fluctuated with demand, but a large part of world requirements has been met from the State's resources. Tungsten ores have been produced in small quantities for some years with a slight increase during the war. Since then, output has been spasmodic, but in 1952 was valued at £49,710. Lithium, yttrium, cerium, thorium, vanadium, niobium and molybdenum-bearing minerals are known to occur in commercial quantities and small amounts of minerals containing uranium, rubidium and caesium have been found. Deposits of bentonite, barytes, graphite, mica, kyanite, sillimanite, spodumene and vermiculite are also known and small amounts have been produced.

An extensive programme of oil exploration was commenced in 1951 but, although flow oil was found in the Exmouth Gulf area of the Carnarvon Basin in 1953, no commercial development resulted. After 1953 the search was intensified and a large area of the State has been scientifically examined and geological and geophysical surveys are still being carried out. Bores have been drilled at a number of points in the Carnarvon, Perth and Eucla Basins and in the Fitzroy section of the Canning Basin, and exploration is continuing.

Quarrying

The following table gives details of the production of certain quarry products from 1952–53 to 1962.

SELECTED ITEMS OF QUARRY PRODUCTION

Year	Building and Monumental Stone (*a*)	Other Stone	
		Granite, Diorite, Quartzite, Basalt, etc. (*b*)	Limestone and Shell (*c*)
	tons	tons	tons
1952–53	92,384	403,580	202,294
1953–54	94,611	436,385	231,625
1954–55	118,336	511,877	242,078
1956 (*d*)	80,076	489,505	370,254
1957 (*d*)	55,331	504,282	427,286
1958 (*d*)	76,159	463,983	436,531
1959 (*d*)	71,648	743,595	481,604
1960 (*d*)	112,110	755,172	557,022
1961 (*d*)	131,046	763,155	515,576
1962 (*d*)	127,971	930,891	762,108

(*a*) Calcareous sandstone (including limestone) and granite. (*b*) Principally for roads, concrete aggregate, filling, etc. (*c*) Principally for the manufacture of lime and cement and for road making. (*d*) Year ended 31st December.

The increasing demand for building and road construction materials is shown by the preceding table but it should be noted that gravel, sand and clays, for which reliable and complete information cannot be obtained, are not included.

CHAPTER VIII —*continued*

PART 2—SECONDARY INDUSTRY

EXPLANATORY NOTES AND DEFINITIONS

Unless otherwise stated the figures quoted in this Part cover all industrial establishments conforming to the definition of a factory, including power stations and gas works.

Factory

For statistical purposes a factory is defined as any establishment which is engaged in the processes of manufacturing, assembling, treating or repairing and in which four or more persons are employed during any period of the year or power other than manual is used.

Employment

Average employment figures may be expressed as an average " over the period worked " or as an average " over the whole year." Thus a factory which operates for only six months of the year and employs 20 persons throughout that period has an average employment of 20 *" over the period worked " but an average of only* 10 *" over the whole year." Where seasonal industries, such as meat and fish preserving, whaling or fruit packing, are involved there can consequently be a considerable difference between figures covering the same field if different bases are used in their computation. In this Part, unless otherwise stated, figures quoted are the average " over the whole year." It should also be noted that they include working proprietors, but exclude all persons engaged in obtaining raw materials (e.g., fallers and haulers employed by sawmills) and all persons engaged in selling and distribution.*

Salaries and Wages

Salaries and wages quoted exclude amounts drawn by working proprietors.

Value of Output

The value of output is the selling value " at the factory " (i.e., the value at the point of sale less *all selling and distribution costs) of all goods made or processed during the year and includes the amount received for other work done, such as repair work, assembling and making-up for customers. Any bounty or subsidy received on finished products is included.*

Net Production

" Net Production " is the value added in the course of manufacture and represents the sum available for payment of wages, rent, depreciation, other sundry expenses and for interest and profit. It is derived from the value of output by deducting the cost of goods consumed in the process of production. The costs deducted are those of materials used, fuel, power and light, lubricating oil and water, repairs to plant and buildings, tools replaced, and containers and packings.

Confidential Information

The Acts under which these statistics are collected require that information supplied on any individual return must be treated as confidential. For this reason it has not been possible to publish some items and in other cases it has been necessary to combine details for publication. The tables affected carry appropriate footnotes.

HISTORICAL REVIEW

While secondary industry in Western Australia has grown considerably since 1900 the greatest advance both in the number and the size of factories operating has occurred since 1945. One of the factors contributing to this growth has been the provision of adequate power in the south-western portion of the State by the expansion of electricity supplies provided by generating stations linked in a grid system.

In 1900 there were 632 factories operating in Western Australia. By 1910 the number had risen to 822 and by 1920 to 998. Progress during the first World War was comparatively slow, mainly because the more advanced manufacturing facilities already existing in other States were better suited to rapid development. During the decade 1921–1930, however, efforts were made to foster Western Australian secondary industry and considerable success was achieved during the latter years of this period, the number of factories increasing from 1,170 in 1926 to 1,466 in 1930. Although some decline occurred in the depression years of 1930 to 1933, there were 1,658 factories in operation in 1935 and by 1940 the number had reached 2,129.

No immediate stimulus to the State's manufacturing activity followed the outbreak of the second World War, but the more direct threat to Australia which resulted from the fall of Singapore called for

a total use of industrial potential, and from 1942 onwards an increasing volume of war contracts was placed in Western Australia. The greatest demand was for processed foodstuffs but other forms of war production which were especially developed included munitions manufacture, shipbuilding (principally of wooden coastal craft) and marine engineering. Although fewer factories operated because of the decline in those classes of production which were purely for civilian purposes, employment and output increased substantially.

Production which had been developed largely to meet the demands of the armed services declined sharply at the conclusion of the war and this was reflected particularly in the decreased manufacture of processed foodstuffs, the full production of which considerably exceeded civilian requirements. However, secondary industry as a whole benefited greatly from the engineering skills and equipment acquired in wartime activities and their transfer to civilian uses facilitated the expansion of the metal industries in the State and influenced the production of small to medium-sized machine tools and the establishment of a factory producing several types of tractors and farm machinery.

Such advances enlarged the scope of Western Australian secondary industry and by 1961–62 the number of factories had increased to 4,418. However, net production per head of population is still low in comparison with other States, particularly New South Wales and Victoria which have consistently increased their lead in industrial production. Manufacturing net production per head of population in each of the States during the year ended 30th June, 1962, was as follows :—New South Wales, £245 3s. ; Victoria, £242 4s. ; Queensland, £114 8s. ; South Australia, £177 4s. ; Western Australia, £131 5s. ; and Tasmania, £179 3s.

The average number of persons employed in Western Australian factories from 1900 to 1960 was as follows :—1900, 11,166 persons ; 1905, 13,481 ; 1910, 14,894 ; 1915, 15,882 ; 1920, 16,942 ; 1925–26, 20,667 ; 1929–30, 19,643 ; 1934–35, 17,769 ; 1939–40, 22,967 ; 1944–45, 29,146 ; 1949–50, 40,733 ; 1954–55, 49,314 and 1959–60, 49,651. These figures indicate the moderate increase which occurred in factory employment between 1900 and 1920, the continued expansion in the 1920's, the decline in the early 1930's and the accelerated development during and after the second World War. They do not show the levels to which it fell during the first World War and during the depression years but these movements can be seen from the annual averages appearing in the *Statistical Summary from 1829* preceding the *Appendix*.

The large increase between 1944–45 and 1949–50 was due in part to the establishment of many smaller types of factory, such as motor-repair workshops, dry-cleaning works and bakeries, resulting from the return to civilian life of service personnel and from unusually large population gains by natural increase and from immigration. This high level of population increase was maintained in the following five years and in 1954–55 average factory employment reached 49,314. In 1955–56 the number of persons engaged in factories exceeded 50,000 for the first time but then declined in each of the three succeeding years and in 1958–59 had fallen to 48,417. An improvement in 1959–60, when the average for the year rose to 49,651, was maintained over the next three years and by 1962–63 employment in factories had risen to 53,435.

Several relatively large concerns began to operate during the post-war years. Sharp rises in the total horsepower of engines used to drive machinery are indicative of this growth in the number of highly-mechanized works. Increases in net production and the enhanced values of land and buildings and of plant and machinery are also significant, but when considering these figures allowances should be made for price changes which occurred during the period.

In 1948 a blast furnace, using charcoal made in an associated wood-distillation plant, began producing high-grade charcoal-iron. Additions have since been made to the plant and its original capacity of 10,000 tons per annum has been expanded to approximately 50,000 tons. Major developments have included the establishment of an oil refinery in 1955, and a second portland cement factory and a steel-rolling mill in 1956. In 1963, BP Refinery (Kwinana) Ltd. began operating a lubricating oil refinery which was added to its plant at Kwinana. In 1960 the State Parliament passed legislation to ratify agreements made by the Government with the Broken Hill Proprietary Company Limited relating to the establishment of an integrated iron and steel works in Western Australia and with Australian Paper Manufacturers Limited for the establishment and operation of a mill to produce paper and paper board. Reference is made to this legislation on pages 92 and 95 of the *Official Year Book of Western Australia, No. 3 (New Series)*. A chemical factory engaged in the extraction of titanium oxide pigment from ilmenite was brought into operation at Bunbury late in 1963 and a refinery at Kwinana for the production of alumina from bauxite mined in the Darling Range also commenced operations towards the end of 1963.

A summary of selected items of factory activity from 1900 is given in the following table.

SELECTED ITEMS OF FACTORY ACTIVITY

Year	Number of Factories	Persons Employed (a)			Book Values of :—		Engines and Electric Motors used to drive Machinery (b)	Net Production
		Males	Females	Total	Land and Buildings	Plant and Machinery		
					£	£	rated h.p.	£
1900	632	10,261	905	11,166	1,204,326	1,252,927	7,270	(c)
1905	777	11,829	1,652	13,481	1,789,612	1,869,753	11,151	(c)
1910	822	12,404	2,490	14,894	1,822,768	1,939,273	11,378	2,736,000
1915	983	13,453	2,429	15,882	2,635,523	2,733,582	21,997	3,233,935
1920	998	14,311	2,631	16,942	3,563,777	3,411,248	26,481	4,854,075
1925–26 (d)	1,170	17,393	3,274	20,667	4,855,161	5,480,905	37,631	9,611,113
1929–30	1,466	15,921	3,722	19,643	5,623,214	6,090,986	37,754	7,488,060
1934–35	1,658	14,248	3,521	17,769	5,673,461	5,763,428	42,520	6,284,923
1939–40	2,129	18,331	4,636	22,967	6,863,468	7,958,495	66,925	9,027,728
1944–45	1,931	22,404	6,742	29,146	7,654,187	8,254,231	80,667	12,960,009
1949–50	3,023	33,711	7,022	40,733	11,055,002	11,456,767	120,380	26,044,026
1954–55	3,727	42,294	7,020	49,314	30,229,913	54,958,205	204,848	60,955,829
1957–58	3,941	42,039	6,423	48,462	36,845,609	63,840,075	242,719	75,312,250
1958–59	4,125	41,951	6,466	48,417	40,689,726	66,097,785	254,395	78,762,159
1959–60	4,279	42,957	6,694	49,651	43,572,762	64,224,950	261,660	86,373,312
1960–61	4,334	43,836	6,830	50,666	45,610,121	64,305,862	268,955	96,630,801
1961–62	4,418	44,193	6,840	51,033	49,168,318	61,716,384	276,186	98,041,418

(a) Includes working proprietors and, up to and including 1925–26, fallers and haulers employed by sawmills. (b) Excludes engines used in electricity generating stations and motors driven by electricity of own generation. (c) Figures not available. (d) Period of 18 months ended 30th June, 1926.

During the period reviewed, population censuses were taken in the years 1901, 1911, 1921, 1933, 1947, 1954 and 1961. In the following table factory employment in those years is compared with the " total work force " as recorded at the census and also as adjusted to give comparable components for the two sets of figures. The " adjusted total work force " shown includes employers, self-employed persons and wage and salary earners but excludes persons who were not actually employed at the time of the census, whether this was due to inability to secure work, to sickness or industrial disputes, or to any other cause. It also excludes helpers not receiving wage or salary. Although it includes a small number of employers who were not themselves actively engaged, this is insufficient to affect the validity of the comparison.

FACTORY EMPLOYMENT IN RELATION TO TOTAL WORK FORCE

Year	Census Date	Average Number of Factory Workers during the Year	Total Work Force at Census Date	Adjusted Total Work Force at Census Date	Proportion of Factory Workers to Adjusted Total Work Force
					per cent.
1901	1901—31st March	(a) 12,198	98,145	91,600	13·3
1911	1911—3rd April	(a) 16,754	133,253	125,886	13·3
1921	1921—4th April	(a) 18,151	140,296	129,641	14·0
1932–33	1933—30th June	(b) 14,810	187,636	159,222	9·3
1946–47	1947—30th June	(b) 33,806	206,400	197,825	17·1
1953–54	1954—30th June	(b) 47,459	258,401	253,270	18·7
1960–61	1961—30th June	(b) 51,033	279,784	267,997	19·0

(a) Figures for calendar year. Includes fallers and haulers employed by sawmills. (b) For year ended 30th June.

GENERAL SUMMARY

Location of Secondary Industry

The greatest population, both in number and in density, occurs in the Metropolitan Statistical Division and, with a few notable exceptions, the principal factories and more than half of the small to moderate-sized establishments are located there. The Swan Division ranks next in density of population and the establishment of major industries in the Kwinana area also places it next in manufacturing activity measured by such standards as value of plant and machinery, consumption of power, fuel and light, cost of materials used, value of output and net production. The South-West Division ranks next to the Metropolitan Division in total population and also in factory employment and number of factories.

These three Divisions together contain approximately three-quarters of the total population of the State and other factors influencing the concentration of manufacturing industry in the area are the easier availability of raw materials and the provision of adequate power and fuel supplies and transport facilities. Electric power is distributed in the Metropolitan and Swan Divisions by the State Electricity Commission and a grid system established by the Commission now distributes power over a large part of the South-West Division. The only coal deposits at present being worked are in the South-West Division near Collie, some 120 miles to the south of Perth. These Divisions also contain well-developed road and railway systems, the State's principal port at Fremantle and other ports at Bunbury and Busselton.

Reference to manufacturing activity in the several Statistical Divisions of the State is also made in the section *Geographical Distribution of Industry* which appears at the beginning of this Chapter. The Divisions are shown on the map at the back of the Year Book.

PRINCIPAL ITEMS ACCORDING TO STATISTICAL DIVISIONS, 1961-62

Statistical Division	Number of Factories	Book Values of—		Persons Employed (including Working Proprietors) (*a*)		Salaries and Wages (excluding Amounts drawn by Working Proprietors)	
		Land and Buildings	Plant and Machinery	Males	Females	Males	Females
		£	£			£	£
Metropolitan	2,621	34,199,036	25,842,707	31,305	5,768	30,268,091	3,166,387
Percentage of State Total	59·33	69·56	41·87	70·84	84·33	70·88	85·18
Other Divisions—							
Swan	210	4,491,713	18,712,388	3,571	265	3,925,171	150,233
South-West	513	5,010,724	9,065,657	4,226	246	3,718,221	114,663
Southern Agricultural	288	1,600,172	1,737,871	1,417	270	1,271,612	153,551
Central Agricultural	324	1,224,524	1,916,705	1,478	93	1,266,144	34,909
Northern Agricultural	208	976,022	1,025,100	864	91	718,240	46,864
Eastern Goldfields	167	574,135	1,607,596	786	71	726,669	32,273
Central	19	39,512	157,386	44	2	36,353	364
North-West	17	154,722	484,158	108	13	135,881	5,361
Pilbara	17	46,868	298,417	68	2	98,959	
Kimberley	34	850,890	868,399	326	19	537,347	12,884
Total, Other Divisions	1,797	14,969,282	35,873,677	12,888	1,072	12,434,597	551,102
Percentage of State Total	40·67	30·44	58·13	29·16	15·67	29·12	14·82
STATE TOTAL	4,418	49,168,318	61,716,384	44,193	6,840	42,702,688	3,717,489

Statistical Division	Value of Output	Cost of—				Net Production (*b*)
		Power, Fuel and Light (including Water and Lubricants)	Repairs to Buildings and Plant	Materials Used (including Containers)	Total	
	£	£	£	£	£	£
Metropolitan	136,413,869	3,396,450	1,951,117	70,097,781	75,445,348	60,968,521
Percentage of State Total	56·02	32·76	48·03	53·50	51·87	62·19
Other Divisions—						
Swan	60,607,158	2,763,933	929,491	39,068,458	42,761,882	17,845,276
South-West	19,456,936	1,802,949	509,588	8,325,492	10,638,029	8,818,907
Southern Agricultural	7,162,508	272,299	153,587	3,845,359	4,271,245	2,891,263
Central Agricultural	7,069,320	689,769	150,108	3,583,322	4,423,199	2,646,121
Northern Agricultural	5,487,962	153,809	102,251	3,505,776	3,761,836	1,726,126
Eastern Goldfields	3,363,272	942,685	119,279	709,024	1,770,988	1,592,284
Central	220,142	82,358	8,357	24,261	114,976	105,166
North-West	613,683	32,687	15,964	255,872	304,523	309,160
Pilbara	435,588	113,300	28,079	95,938	237,317	198,271
Kimberley	2,663,447	117,665	94,399	1,511,060	1,723,124	940,323
Total, Other Divisions	107,080,016	6,971,454	2,111,103	60,924,562	70,007,119	37,072,897
Percentage of State Total	43·98	67·24	51·97	46·50	48·13	37·81
STATE TOTAL	243,493,885	10,367,904	4,062,220	131,022,343	145,452,467	98,041,418

(*a*) Average over whole year. (*b*) See *Explanatory Notes and Definitions* on page 298.

FACTORIES AND EMPLOYMENT IN EACH STATISTICAL DIVISION

Statistical Division	Year				
	1957–58	1958–59	1959–60	1960–61	1961–62
NUMBER OF FACTORIES					
Metropolitan	2,346	2,433	2,528	2,561	2,621
Swan	178	187	199	213	210
South-West	483	514	529	516	513
Southern Agricultural	248	268	279	284	288
Central Agricultural	313	322	326	319	324
Northern Agricultural	157	173	180	193	208
Eastern Goldfields	139	147	152	161	167
Central	19	19	19	18	19
North-West	16	17	19	18	17
Pilbara	14	14	16	18	17
Kimberley	28	31	32	33	34
Whole State	3,941	4,125	4,279	4,334	4,418
PERSONS EMPLOYED (*a*)					
Metropolitan	35,527	35,260	36,204	36,750	37,073
Swan	3,295	3,348	3,559	3,735	3,836
South-West	4,558	4,595	4,562	4,596	4,472
Southern Agricultural	1,572	1,709	1,703	1,697	1,687
Central Agricultural	1,532	1,511	1,535	1,569	1,571
Northern Agricultural	657	692	758	884	955
Eastern Goldfields	819	798	814	855	857
Central	56	53	43	45	46
North-West	144	130	112	124	121
Pilbara	34	36	55	69	70
Kimberley	268	285	306	342	345
Whole State	48,462	48,417	49,651	50,666	51,033

(*a*) Average over the whole year and inclusive of working proprietors.

Employment and Wages

For statistical purposes, secondary industry is divided into the 16 classes shown in the table on page 303. The largest volume of employment is provided in Class IV—Industrial Metals, Machines, Implements and Conveyances. In 1961–62 the industries which comprise this class employed an average over the whole year of 20,923 persons, including 3,326 in government workshops engaged in constructing and repairing railway rolling stock. Another large employer of labour is the class Sawmilling, Woodworking and Basketware. Mills sawing logs employed 3,080 persons, and those engaged only in resawing and dressing of rough-sawn timber, 631. In the class Food, Drink and Tobacco, there were 1,102 persons engaged in bakeries and 1,816 in meat and fish preserving factories. In chemical fertilizer works, within the class Chemicals, Dyes, Explosives, Paints, Oils and Grease, employees numbered 986 and in brick, tile and pottery works, in the class Bricks, Pottery, Glass, etc., 1,028 persons were employed.

The first table on page 303 gives detailed employment data in each class for June, 1962, and as a total for June in each year from 1958 to 1961. For the purpose of this table, figures for June have been chosen in order to show the incidence of junior employment, particulars of which are collected for that month only.

In 1945, towards the end of the war, the ratio of male to female employment was 3·3 : 1. Within the next five years it increased to 4·6 : 1 and by 1954–55 it had risen to 6·1 : 1. It then rose slowly to 6·3 : 1 in 1956–57 and has since shown little variation, the ratio in 1961–62 being slightly under 6·4 : 1.

During the same period there was a substantial fall in the proportion of junior employment in both sexes. However, although the proportion of junior males to total males employed became fairly steady by about 1950 and has not changed greatly since, the proportion of junior females continued to fall until 1955 and has since tended to increase slightly. The changes which have occurred during the five years from 1958 to 1962 in the age grouping of workers in secondary industry are illustrated in the second table on page 303 where the numbers of males and females in each age group are expressed as a percentage of total factory employment for each sex.

FACTORY EMPLOYMENT FOR THE MONTH OF JUNE, 1962

(Excluding Working Proprietors)

	Class of Industry	Number of Factories	Employees			Age Group					
			Male	Female	Total	Under 16 years		16 years and under 21		21 years and over	
						M.	F.	M.	F.	M.	F.
I	Treatment of Non-metalliferous Mine and Quarry Products	140	1,575	88	1,663	26		109	31	1,440	57
II	Bricks, Pottery, Glass, etc.	52	1,348	106	1,454	19	4	88	22	1,241	80
III	Chemicals, Dyes, Explosives, Paints, Oils, Grease	73	2,465	206	2,671	16	8	140	70	2,309	128
IV	Industrial Metals, Machines, Conveyances	2,006	19,836	1,087	20,923	523	37	3,099	387	16,214	663
V	Precious Metals, Jewellery, Plate	74	134	13	147	5		26	8	103	5
VI	Textiles and Textile Goods (inclusive of Knitted Goods)	40	464	422	886	12	24	63	137	389	261
VII	Skins and Leather (not Clothing or Footwear)	25	503	114	617	28	8	61	34	414	72
VIII	Clothing (except Knitted)	394	686	1,990	2,676	30	185	141	651	515	1,154
IX	Food, Drink and Tobacco	624	5,026	1,444	6,470	113	68	547	500	4,366	876
X	Sawmilling, Woodworking and Basketware	457	5,056	87	5,143	116	1	505	23	4,435	63
XI	Furniture of Wood, Bedding, etc.	174	985	196	1,181	54	9	212	53	719	134
XII	Paper, Stationery, Printing, Bookbinding, etc.	139	2,220	618	2,838	65	52	393	247	1,762	319
XIII	Rubber	46	238	29	267	1	1	38	13	199	15
XIV	Musical Instruments	8	27		27	2		7		18	
XV	Miscellaneous Products	74	348	168	516	21	14	79	59	248	95
	Total, Classes I to XV	4,326	40,911	6,568	47,479	1,031	411	5,508	2,235	34,372	3,922
XVI	Heat, Light and Power	92	1,171	16	1,187			54	7	1,117	9
	TOTAL, ALL CLASSES— June, 1962	4,418	42,082	6,584	48,666	1,031	411	5,562	2,242	35,489	3,931
	June, 1961	4,334	40,344	6,297	46,641	947	350	5,318	2,097	34,079	3,850
	June, 1960	4,279	40,448	6,382	46,830	863	332	5,190	2,165	34,395	3,885
	June, 1959	4,125	39,136	6,212	45,348	822	331	5,001	2,077	33,313	3,804
	June, 1958	3,941	39,054	6,178	45,232	769	327	5,043	2,055	33,242	3,796

PERCENTAGE OF FACTORY EMPLOYEES IN CERTAIN AGE GROUPS

Month of June	Under 16 years	16 years and under 21	Total under 21 years	21 years and over	All Ages
MALES					
1958	1·97	12·91	14·88	85·12	100·00
1959	2·10	12·78	14·88	85·12	100·00
1960	2·13	12·83	14·96	85·04	100·00
1961	2·35	13·18	15·53	84·47	100·00
1962	2·45	13·22	15·67	84·33	100·00
FEMALES					
1958	5·29	33·27	38·56	61·44	100·00
1959	5·33	33·43	38·76	61·24	100·00
1960	5·20	33·93	39·13	60·87	100·00
1961	5·56	33·30	38·86	61·14	100·00
1962	6·24	34·05	40·29	59·71	100·00

The average amount of salary and wages paid to both male and female employees in secondary industry has increased each year since 1952–53. In the following table details are shown for each class of industry in each of the ten years from 1952–53 to 1961–62, together with comparative totals for the whole of Australia.

AVERAGE ANNUAL AMOUNT OF SALARY AND WAGES PAID PER EMPLOYEE (a)

(£)

MALES

	Class of Industry	Year ended 30th June									
		1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
I	Treatment of Non-Metalliferous Mine and Quarry Products	716	793	815	851	870	871	902	956	1,023	1,066
II	Bricks, Pottery, Glass, etc.	720	781	847	880	872	926	913	955	994	1,037
III	Chemicals, Dyes, Explosives, Paints, Oils, Grease	867	877	932	1,021	1,001	1,061	1,065	1,111	1,174	1,216
IV	Industrial Metals, Machines, Implements, and Conveyances	682	730	781	821	835	856	876	918	974	991
V	Precious Metals, Jewellery, Plate	716	736	797	829	895	890	869	941	1,002	1,062
VI	Textiles and Textile Goods (inclusive of Knitted Goods)	736	830	815	871	931	954	993	1,050	1,026	1,010
VII	Skins and Leather (not Clothing or Footwear)	747	777	790	865	914	912	950	1,040	1,052	1,076
VIII	Clothing (except Knitted)	714	703	753	771	794	834	828	863	911	897
IX	Food, Drink and Tobacco	797	822	838	863	889	937	952	1,000	1,052	1,088
X	Sawmilling, Woodworking and Basketware	650	701	724	755	777	798	823	861	915	930
XI	Furniture of Wood, Bedding, etc.	610	660	689	737	738	795	820	856	904	923
XII	Paper, Stationery, Printing, Bookbinding, etc.	742	801	875	910	934	969	1,020	1,096	1,136	1,141
XIII	Rubber	729	739	827	839	844	871	860	916	1,030	1,027
XIV	Musical Instruments	575	590	673	726	819	736	787	775	948	819
XV	Miscellaneous Products	605	683	705	729	765	800	814	849	907	916
XVI	Heat, Light and Power	906	911	994	1,054	1,077	1,045	1,076	1,158	1,224	1,262
	ALL CLASSES— Western Australia	712	754	798	840	857	885	905	951	1,005	1,026
	Australia	783	821	878	934	971	1,001	1,031	1,112	1,159	1,177

FEMALES

	Class of Industry	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
VI	Textiles and Textile Goods (inclusive of Knitted Goods)	423	430	441	469	482	491	527	537	570	579
VII	Skins and Leather (not Clothing or Footwear)	394	417	424	466	496	507	488	494	489	529
VIII	Clothing (except Knitted)	404	428	436	448	464	479	478	510	530	538
IX	Food, Drink and Tobacco	391	414	424	436	457	459	482	517	555	563
XII	Paper, Stationery, Printing, Bookbinding, etc.	376	408	426	427	437	478	497	537	548	577
XV	Miscellaneous Products	360	383	381	404	420	384	427	467	526	501
	All other Classes	407	422	447	471	490	499	506	519	572	585
	ALL CLASSES— Western Australia	400	422	434	450	467	479	490	517	550	562
	Australia	468	493	510	530	558	578	592	633	651	670

TOTAL EMPLOYEES

	Class of Industry	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
I	Treatment of Non-Metalliferous Mine and Quarry Products	708	783	808	839	858	858	888	939	1,002	1,045
II	Bricks, Pottery, Glass, etc.	700	749	814	852	837	890	879	926	967	1,010
III	Chemicals, Dyes, Explosives, Paints, Oils, Grease	826	832	888	977	959	1,014	1,018	1,059	1,129	1,167
IV	Industrial Metals, Machines, Implements and Conveyances	669	717	766	805	818	839	858	897	953	969
V	Precious Metals, Jewellery, Plate	671	700	756	799	867	858	846	923	976	1,008
VI	Textiles and Textile Goods (inclusive of Knitted Goods)	589	644	624	683	730	749	791	823	813	811
VII	Skins and Leather (not Clothing or Footwear)	691	711	719	791	837	842	867	933	946	979
VIII	Clothing (except Knitted)	487	499	515	532	554	576	574	606	630	633
IX	Food, Drink and Tobacco	704	726	744	769	793	830	850	896	940	970
X	Sawmilling, Woodworking and Basketware	647	697	721	751	774	794	819	856	910	924
XI	Furniture of Wood, Bedding, etc.	586	632	661	704	704	756	775	802	857	869
XII	Paper, Stationery, Printing, Bookbinding, etc.	655	707	766	795	820	859	902	971	1,007	1,017
XIII	Rubber	702	698	793	802	806	830	821	859	950	968
XIV	Musical Instruments	575	590	664	716	797	743	789	775	948	819
XV	Miscellaneous Products	532	590	599	633	659	672	684	718	778	780
XVI	Heat, Light and Power	900	901	987	1,045	1,072	1,039	1,069	1,150	1,218	1,253
	ALL CLASSES— Western Australia	665	703	744	785	802	829	848	890	942	963
	Australia	710	743	789	837	872	901	927	996	1,036	1,056

(a) Excludes working proprietors and amounts drawn by them.

Capital Employed

BOOK VALUES AND RENTALS OF LAND AND BUILDINGS, PLANT AND MACHINERY

Year	Land and Buildings				Plant and Machinery			
	Owned by User (*a*)	Rented		Total Value	Owned by User (*a*)	Rented		Total Value
		Annual Rental	Estimated Capital Value			Annual Rental	Estimated Capital Value	
	£	£	£	£	£	£	£	£
1952–53	16,185,253	318,290	4,774,350	20,959,603	23,609,284	42,553	425,530	24,034,814
1953–54	19,420,254	354,579	5,318,685	24,738,939	27,652,513	54,247	542,470	28,194,983
1954–55	23,776,928	430,199	6,452,985	30,229,913	54,368,065	59,014	590,140	54,958,205
1955–56	25,780,151	471,920	7,078,800	32,858,951	55,927,885	60,579	605,790	56,533,675
1956–57	27,818,004	513,442	7,701,630	35,519,634	62,664,615	60,757	607,570	63,272,185
1957–58	28,897,709	529,860	7,947,900	36,845,609	63,238,535	60,154	601,540	63,840,075
1958–59	32,291,961	559,851	8,397,765	40,689,726	65,336,165	76,162	761,620	66,097,785
1959–60	34,449,177	608,239	9,123,585	43,572,762	63,462,520	76,243	762,430	64,224,950
1960–61	35,923,241	645,792	9,686,880	45,610,121	63,185,352	112,051	1,120,510	64,305,862
1961–62	38,414,848	716,898	10,753,470	49,168,318	60,637,374	107,901	1,079,010	61,716,384

(*a*) As at end of year.

Motive Power and Fuel Consumed

RATED HORSEPOWER OF ENGINES(†) EMPLOYED TO DRIVE MACHINERY

Year	Steam		Internal Combustion			Motors driven by—		Total (*a*)
	Reciprocating	Turbine	Gas	Light Oil	Heavy Oil	Electricity Purchased	Electricity of own Generation	
1952–53	10,827	130	1,559	7,156	15,827	124,604	7,435	160,103
1953–54	11,002	130	355	9,482	13,786	134,939	7,480	169,694
1954–55	11,010	10,613	1,499	10,712	12,068	158,946	6,470	204,848
1955–56	12,122	10,609	1,462	15,601	11,867	172,009	6,369	223,670
1956–57	11,167	10,638	1,393	15,788	9,973	190,000	5,170	238,959
1957–58	11,318	11,002	1,302	13,362	9,707	196,028	4,931	242,719
1958–59	10,912	11,640	3,495	15,736	9,203	203,409	5,282	254,395
1959–60	10,070	11,665	3,505	19,292	6,145	210,983	5,558	261,660
1960–61	10,226	11,665	3,401	17,251	7,846	218,566	6,526	268,955
1961–62	9,430	11,615	3,395	17,269	7,271	227,206	6,235	276,186

(†) Excludes engines held in reserve or idle and engines used in electricity generating stations. (*a*) Excludes particulars shown under "Electricity of own Generation."

POWER, FUEL AND LIGHT USED IN FACTORIES

Year	Coal		Coke		Wood		Fuel Oil		Electricity	Other (Gas, Tar, Fuel, etc.)
	tons	£	tons	£	tons	£	'000 gal.	£	£	£
1952–53	443,783	2,137,504	22,378	129,214	429,556	644,352	14,120	1,369,600	1,382,211	203,920
1953–54	568,130	2,891,657	17,922	147,102	358,599	462,236	15,518	1,392,205	1,534,571	207,004
1954–55	602,871	3,225,276	18,135	144,288	345,326	429,094	31,748	1,961,268	1,710,148	207,197
1955–56	586,312	2,955,651	21,743	178,359	330,459	420,252	52,342	2,920,077	1,920,364	248,003
1956–57	537,464	2,646,366	23,460	216,703	322,222	420,764	52,209	3,321,370	1,933,825	269,546
1957–58	562,456	2,535,154	20,101	196,429	312,532	415,930	53,579	3,497,146	1,991,402	339,280
1958–59	581,979	2,537,071	18,464	212,759	281,841	378,227	64,861	3,533,000	2,052,931	384,169
1959–60	606,566	2,568,443	17,920	222,018	271,083	380,968	70,738	3,591,644	2,243,709	550,371
1960–61	493,993	2,105,638	17,975	222,787	306,982	440,275	97,195	4,412,037	2,288,408	576,382
1961–62	621,322	2,352,288	18,319	222,010	249,847	383,381	92,953	3,924,229	2,289,954	580,817

Electricity is the most economical and convenient source of power in the principal manufacturing areas of the State and most factories have plants designed for its use. This position has become more pronounced as the installation of new major generating stations has extended the area in which adequate

electric power is available. Electric motors are consequently the main source of motive power in factories. Oil engines are next in order of total horsepower produced and are still used in those country districts which are not yet supplied with power from the central generating stations.

The increased horsepower of steam engines in use in 1954–55 was due to an expansion in Class III, which covers the production of chemicals, dyes, explosives, paints, oils and grease, and in which specialized processes make their use desirable.

The tables on page 305 show the various types of motive power used during the ten years from 1952–53 to 1961–62 and the quantities and cost of fuel used. The fuels consumed are used for such heating purposes as brick and pottery firing, lime burning and the heating of bakers' ovens, as well as for steam generation and the operation of engines.

Value of Output and Net Production

The basis on which each of these values is computed is defined in the section *Explanatory Notes and Definitions* on page 298. The annual values of output and net production and of net production per person employed are shown in the following table for the years 1952–53 to 1961–62.

VALUE OF OUTPUT AND NET PRODUCTION

Year	Value of Output	Net Production		Year	Value of Output	Net Production	
		Total	Average per Person Employed(a)			Total	Average per Person Employed(a)
	£	£	£		£	£	£
1952–53	119,309,764	49,191,332	1,089	1957–58	196,262,633	75,312,250	1,554
1953–54	134,586,811	55,147,229	1,162	1958–59	196,202,698	78,762,159	1,627
1954–55	149,584,445	60,955,829	1,236	1959–60	215,582,476	86,373,312	1,740
1955–56	175,146,435	69,732,802	1,392	1960–61	240,570,015	96,630,801	1,907
1956–57	187,636,004	73,441,949	1,507	1961–62	243,493,885	98,041,418	1,921

(a) Based on average employment (including working proprietors) over the whole year.

In the following table net production per employee is shown for each class of industry for the years 1957–58 to 1961–62.

NET PRODUCTION PER PERSON EMPLOYED (a)

	Class of Industry	1957–58	1958–59	1959–60	1960–61	1961–62
		£	£	£	£	£
I	Treatment of Non-metalliferous Mine and Quarry Products	1,946	2,031	2,036	2,285	2,438
II	Bricks, Pottery, Glass, etc.	1,513	1,533	1,746	1,783	1,855
III	Chemicals, Dyes, Explosives, Paints, Oils, Grease	4,510	5,064	5,507	6,505	5,570
IV	Industrial Metals, Machines, Implements and Conveyances	1,247	1,287	1,352	1,478	1,551
V	Precious Metals, Jewellery, Plate	1,230	1,245	1,386	1,497	1,473
VI	Textiles and Textile Goods (inclusive of Knitted Goods)	1,523	1,581	1,723	1,604	1,417
VII	Skins and Leather (not Clothing or Footwear)	1,203	1,369	1,546	1,534	1,573
VIII	Clothing (except Knitted)	844	836	905	929	942
IX	Food, Drink and Tobacco	1,637	1,693	1,824	2,034	2,089
X	Sawmilling, Woodworking and Basketware	1,283	1,344	1,491	1,519	1,637
XI	Furniture of Wood, Bedding, etc.	1,124	1,150	1,276	1,324	1,422
XII	Paper, Stationery, Printing, Bookbinding, etc.	1,617	1,697	1,808	1,898	1,922
XIII	Rubber	1,613	1,496	1,650	2,140	2,478
XIV	Musical Instruments	945	1,033	1,170	1,231	1,120
XV	Miscellaneous Products	1,057	1,151	1,273	1,306	1,312
	Classes I to XV	1,518	1,590	1,696	1,862	1,871
XVI	Heat, Light and Power	2,918	2,973	3,404	3,719	3,970
	ALL CLASSES	1,554	1,627	1,740	1,907	1,921

(a) Based on average employment (including working proprietors) over the whole year.

Summary According to Industry

The table on pages 307–11 gives number of factories, employment and summarized financial data for 1961–62 for each of the 16 classes of industry and for the sub-classes of which they are comprised.

SUMMARY OF FACTORIES ACCORDING TO INDUSTRY, 1961–62

Nature of Industry	Number of Factories	Persons Employed (*a*)		Salaries and Wages (*b*)	Value of Output	Cost of—					Net Production (*c*)
		Males	Females			Power, Fuel, Light, Water and Lubricants Used	Repairs to Buildings and Plant, etc.	Non-Returnable Containers, etc.	Materials Used	Total	
				£	£	£	£	£	£	£	£
Class I—Treatment of Non-metalliferous Mine and Quarry Products											
Lime, Plaster of Paris, Asphalt	25	168	7	184,799	1,158,736	94,591	25,716	40,467	505,231	666,005	492,731
Fibrous Plaster and Products	33	266	15	249,716	684,929	5,065	6,108	769	303,673	315,615	369,314
Marble, Slate, etc.	10	97	5	87,149	227,229	2,041	6,344	74	60,990	69,449	157,780
Cement, Portland; Asbestos Cement Sheets and Mouldings ‡	3	387	23	472,378	2,801,396	353,893	95,533	111,629	555,434	1,116,489	1,684,907
Other Cement Goods	60	575	27	581,266	2,651,518	34,484	56,851	4,572	1,403,418	1,499,325	1,152,193
Other	9	92	5	105,354	390,038	22,376	23,246	9,633	126,769	182,024	208,014
Total	140	1,585	82	1,680,662	7,913,846	512,450	213,798	167,144	2,955,515	3,848,907	4,064,939
Class II—Bricks, Pottery, Glass, etc.											
Bricks and Tiles	28	783	8	850,051	2,361,530	371,142	119,286	850	239,711	730,989	1,630,541
Earthenware, China, Porcelain, Terracotta	3	162	75	211,418	407,464	47,264	21,050	11,130	38,022	117,466	289,998
Glass Bottles; Glass (other than Bottles) ‡	21	399	24	390,256	1,427,389	110,397	44,037	5,664	496,763	656,861	770,528
Total	52	1,344	107	1,451,725	4,196,383	528,803	184,373	17,644	774,496	1,505,316	2,691,067
Class III—Chemicals, Dyes, Explosives, Paints, Oils, Grease											
Industrial and Heavy Chemicals and Acids; Pharmaceutical and Toilet Preparations; Oils, Vegetable; Oils, Mineral; Oils, Animal; Soaps and Candles; Matches ‡	35	1,227	157	1,687,155	43,954,055	1,990,560	592,795	335,427	29,685,957	32,604,739	11,349,316
White Lead, Paints, Varnishes	14	115	29	141,023	1,298,536	6,696	7,820	141,791	655,767	812,074	486,462
Boiling Down, Tallow Refining	11	118	2	145,973	650,485	76,457	22,175	59,752	161,703	320,087	330,398
Chemical Fertilizers	7	970	16	1,091,405	9,233,498	153,661	259,658	1,055,957	5,169,582	6,638,858	2,594,640
Inks, Polishes, etc.	6	18	11	21,237	163,118	701	607	43,354	45,244	89,906	73,212
Total	73	2,448	215	3,086,793	55,299,692	2,228,075	883,055	1,636,281	35,718,253	40,465,664	14,834,028
Class IV—Industrial Metals, Machines, Implements and Conveyances											
Smelting, Converting, Refining, Rolling of Iron and Steel; Construction and Repair of Vehicles—Tramcars and Railway Rolling Stock: Other than Government; Motor Vehicles: Construction and Assembly ‡	12	1,573	58	1,700,586	12,688,472	641,822	240,474	2,103	7,169,944	8,054,343	4,634,129

For footnotes *see* page 311.

SUMMARY OF FACTORIES ACCORDING TO INDUSTRY, 1961-62—*continued*

Nature of Industry	Number of Factories	Persons Employed (*a*)		Salaries and Wages (*b*)	Value of Output	Cost of—					Net Production (*c*)
		Males	Females			Power, Fuel, Light, Water and Lubricants Used	Repairs to Buildings and Plant, etc.	Non-Returnable Containers, etc.	Materials Used	Total	
				£	£	£	£	£	£	£	£
Class IV—Industrial Metals, Machines, Implements and Conveyances—*continued*											
Foundries (Ferrous)	17	570	13	573,878	1,525,845	122,365	29,689	674	540,607	693,335	832,510
Plant, Equipment and Machinery (including Machine Tools)	168	3,220	212	3,425,590	11,555,893	137,439	108,123	17,887	6,073,433	6,336,882	5,219,011
Other Engineering	156	901	35	802,235	2,629,850	38,982	36,336	667	1,133,858	1,209,843	1,420,007
Extracting and Refining of other Metals : Alloys	3	13		13,313	76,999	3,829	5,599	12	39,091	48,531	28,468
Electrical Machinery, Cables and Apparatus	102	964	97	931,495	2,961,653	31,224	20,488	12,305	1,313,174	1,377,191	1,584,462
Construction and Repair of Vehicles—											
Tramcars and Railway Rolling Stock : Government and Municipal	19	3,303	23	3,067,968	5,792,960	106,629	40,627		1,955,113	2,102,369	3,690,591
Motor Vehicles :											
Repairs	968	4,809	251	4,273,867	12,569,637	128,858	144,320	225	5,317,977	5,591,380	6,978,257
Motor Bodies	197	1,158	49	907,293	3,043,045	19,731	23,678	12	1,432,319	1,475,740	1,567,305
Aircraft	7	213	14	252,951	432,963	7,728	11,349	16	102,012	121,105	311,858
Cycles and Accessories	16	49	2	34,759	137,671	2,149	767	19	70,124	73,059	64,612
Motor Accessories											
Ship and Boat Building and Repairing, and Marine Engineering—Government											
Pipes, Tubes and Fittings—Ferrous											
Stoves, Ovens and Ranges	69	840	59	847,582	3,972,302	80,512	72,140	4,134	1,943,742	2,100,528	1,871,774
Gas Fittings and Meters											
Sewing Machines											
Other Metal Work											
Ship and Boat Building and Repairing, and Marine Engineering—											
Other than Government	39	238	4	211,473	628,572	4,708	6,257	10	271,913	282,888	345,684
Cutlery and Small Hand Tools	13	80	5	65,665	169,372	1,818	3,505	370	52,543	58,236	111,136
Agricultural Machines and Implements	44	368	19	360,379	1,239,070	11,847	17,809	1,987	580,125	611,768	627,302
Non-ferrous Metals—											
Founding, Casting, etc.	29	319	14	282,055	844,918	21,514	9,026	778	349,307	380,625	464,293
Galvanized Iron Working and Tinsmithing—											
Sheet Metal Working, Pressing and Stamping	89	1,200	172	1,247,321	5,333,866	62,409	56,336	28,296	2,822,706	2,969,747	2,364,119
Wire and Wire Working (including Nails)	19	470	42	467,087	2,701,790	30,613	48,763	10,170	1,566,343	1,655,889	1,045,901
Wireless and Amplifying Apparatus	39	152	19	152,727	378,268	3,245	1,939	13	135,848	141,045	237,223
Total	2,006	20,440	1,088	19,618,224	68,683,146	1,457,422	877,225	79,678	32,870,179	35,284,504	33,398,642
Class V—Precious Metals, Jewellery, Plate											
Jewellery	15	30	7	22,102	74,967	874	213	537	20,409	22,033	52,934
Watches and Clocks (including Repairs)	44	78	6	53,356	141,020	1,180	337	124	25,647	27,288	113,732
Electroplating (Gold, Silver, Chromium, etc.)	15	84	3	77,800	187,414	10,253	5,577	52	31,738	47,620	139,794
Total	74	192	16	153,258	403,401	12,307	6,127	713	77,794	96,941	306,460

Class VI—Textiles and Textile Goods (inclusive of Knitted Goods)											
Wool—Carding, Spinning, Weaving											
Flax Mills	‡ 6	342	208	461,821	3,307,851	41,638	63,791	24,658	2,428,926	2,559,013	748,838
Rope and Cordage											
Hosiery and other Knitted Goods	6	21	111	91,967	322,784	3,852	5,134	2,543	181,078	192,607	130,177
Canvas Goods (Tents, Tarpaulins, etc.)	17	89	75	115,018	606,437	3,158	4,213	1,013	360,151	368,535	237,902
Bags and Sacks	7	16	18	27,015	283,861	1,186	1,956	398	202,253	205,793	78,068
Other	4	22		24,559	211,696	2,532	3,994		122,268	128,794	82,902
Total	40	490	412	720,380	4,732,629	52,366	79,088	28,612	3,294,676	3,454,742	1,277,887
Class VII—Skins and Leather (not Clothing or Footwear)											
Furs, Skins and Leather—											
Woolscouring and Fellmongery	5	325	27	385,993	961,579	52,106	30,242	8,978	264,365	355,691	605,888
Furriers and Fur Dressing											
Tanning, Currying and Leather Dressing											
Saddlery, Harness, Bags, Trunks and other Goods of Leather and Leather Substitutes (not Clothing or Footwear)—	‡ 16	181	80	208,621	886,551	12,273	11,943	1,219	495,075	520,510	366,041
Bags, Trunks and other Goods of Leather and Leather Substitutes											
Saddlery, Harness and Whips	4	13	2	9,389	29,874	159	85	27	13,629	13,900	15,974
Total	25	519	109	604,003	1,878,004	64,538	42,270	10,224	773,069	890,101	987,903
Class VIII—Clothing (except Knitted)											
Tailoring and Ready-made Clothing	111	217	380	299,835	1,008,255	9,352	3,874	1,652	458,176	473,054	535,201
Dressmaking, Hemstitching	61	28	579	322,457	822,986	6,197	5,004	2,151	341,733	355,085	467,901
Millinery	6	2	27	12,484	52,373	558	64		22,626	23,248	29,125
Shirts, Collars, Underclothing	14	39	464	266,095	739,851	4,752	4,093	6,802	335,530	351,177	388,674
Handkerchiefs, Ties and Scarves											
Gloves											
Boot and Shoe Accessories	‡ 9	16	32	22,907	92,452	314	403	2,933	44,260	47,910	44,542
Umbrellas and Walking Sticks											
Other Clothing											
Hats and Caps	5	10	68	49,560	132,063	1,338	1,077	1,954	48,505	52,874	79,189
Boots and Shoes (not Rubber)	13	279	223	352,421	1,081,543	8,269	17,943	10,997	534,980	572,189	509,354
Boot and Shoe Repairing	88	177	12	86,135	323,621	3,350	1,665	1,145	83,913	90,073	233,548
Dyeworks and Cleaning (including Renovating and Repairing)	87	242	301	320,566	794,415	48,797	16,253	5,902	94,711	165,663	628,752
Total	394	1,010	2,086	1,732,460	5,047,559	82,927	50,376	33,536	1,964,434	2,131,273	2,916,286
Class IX—Food, Drink and Tobacco											
Flour Milling	16	356	23	376,623	6,223,549	91,042	42,913	386,232	4,902,024	5,422,211	801,338
Cereal Foods and Starch	8	70	55	90,482	848,713	30,507	8,501	122,193	378,311	539,512	309,201
Animal and Bird Foods	21	127	14	138,759	1,797,202	20,940	22,106	76,532	1,195,458	1,315,036	482,166
Bakeries (including Cakes and Pastry)	285	892	210	711,510	4,786,954	148,482	62,136	74,715	2,542,945	2,828,278	1,958,676
Biscuits											
Sugar Refining	‡ 7	285	294	512,842	4,651,666	123,407	40,291	385,643	3,172,407	3,721,748	929,918
Ice Cream											
Confectionery (including Chocolate and Icing Sugar)	6	113	146	196,326	968,039	19,856	18,188	93,813	471,627	603,484	364,555
Jams, Fruit and Vegetable Canning	4	42	42	65,609	450,335	5,608	8,349	86,911	203,134	304,002	146,333
Pickles, Sauces, Vinegar	5	33	41	54,337	311,500	3,682	4,232	49,349	133,719	190,982	120,518
Bacon Cnring	4	255	84	319,412	3,703,706	41,330	25,347	124,704	2,878,550	3,069,931	633,775

For footnotes *see* page 311.

SUMMARY OF FACTORIES ACCORDING TO INDUSTRY, 1961–62—*continued*

Nature of Industry	Number of Factories	Persons Employed (*a*)		Salaries and Wages (*b*)	Value of Output	Cost of—					Net Production (*c*)
		Males	Females			Power, Fuel, Light, Water and Lubricants Used	Repairs to Buildings and Plant, etc.	Non-Returnable Containers, etc.	Materials Used	Total	
				£	£	£	£	£	£	£	£
Class X—Food, Drink and Tobacco—*continued*											
Butter Factories Cheese Factories Condensed and Dried Milk Factories	‡ 18	274	65	308,268	4,107,408	73,532	60,448	148,725	3,235,929	3,518,634	588,774
Margarine Sausage Casings	‡ 4	104	4	125,026	383,380	3,047	2,312	14,536	174,266	194,161	189,219
Meat and Fish Preserving	67	1,608	208	1,958,426	11,809,914	197,396	161,602	505,824	7,690,767	8,555,589	3,254,325
Condiments, Coffee, Spices, etc. (including Tea Blending and Packing, Food Packing, etc.)	66	227	261	315,482	2,395,728	23,695	21,766	454,799	1,029,645	1,529,905	865,823
Ice and Refrigerating	31	308	41	373,179	1,172,453	128,394	74,409	200,218	138,518	541,539	630,914
Aerated Waters, Cordials, etc.	41	257	54	259,781	1,505,132	25,738	31,127	234,847	604,401	896,113	609,019
Breweries Malting Tobacco, Cigars and Cigarettes	‡ 5	479	12	603,903	5,542,122	177,118	56,264	918,001	1,659,942	2,811,325	2,730,797
Wine Making	23	59	11	41,999	305,426	3,096	3,375	25,354	145,534	177,359	128,067
Bottling	13	77	1	73,242	356,069	3,086	2,026	192,171	85	197,368	158,701
Total	624	5,566	1,566	6,525,206	51,319,296	1,119,956	645,392	4,094,567	30,557,262	36,417,177	14,902,119
Class X—Sawmilling, Woodworking and Basketware											
Sawmills—Sawing from the Log	190	3,034	46	2,668,013	9,473,307	246,601	348,688	1,355	3,580,972	4,177,616	5,295,691
Sawmills—Resawing, Dressing, etc.	27	619	12	563,301	2,786,203	50,727	58,812	4,222	1,664,984	1,778,745	1,007,458
Plywood Mills (including Veneers) Bark Mills Wall and Ceiling Board (not Plaster or Cement) Other	‡ 9	262	3	256,527	1,194,995	23,320	37,260	993	537,934	599,507	595,488
Joinery	214	1,352	36	1,253,950	4,057,986	35,955	46,685	299	2,053,071	2,136,010	1,921,976
Cooperage	3	5		4,929	18,278	220	125		9,338	9,683	8,595
Boxes and Cases	3	6		2,295	19,767	409	75		10,987	11,471	8,296
Woodturning, Woodcarving, etc.	5	12	1	9,709	25,917	310	514	9	6,897	7,730	18,187
Basketware, Wickerware and Perambulators	6	47	3	36,046	64,505	358	237	10	15,947	16,552	47,953
Total	457	5,337	101	4,794,770	17,640,958	357,900	492,396	6,888	7,880,130	8,737,314	8,903,644
Class XI—Furniture of Wood, Bedding, etc.											
Cabinet, Furniture Making and Upholstery	152	948	59	747,457	2,917,141	19,223	14,981	1,041	1,552,472	1,587,717	1,329,424
Bedding and Mattresses (not wire)	3	124	72	176,425	849,780	3,947	13,305	766	447,045	465,063	384,717
Furnishing Drapery	5	5	25	15,083	100,499	239	146		72,217	72,602	27,897
Picture Frames	3	9	3	7,950	29,457	158	35		12,093	12,286	17,171
Window and Verandah Blinds	11	47	50	73,970	372,913	1,148	702	932	221,655	224,437	148,476
Total	174	1,133	209	1,020,885	4,269,790	24,715	29,169	2,739	2,305,482	2,362,105	1,907,685

Class XII—Paper, Stationery, Printing, Bookbinding, etc.											
Newspapers and Periodicals	17	781	33	1,001,248	3,653,420	48,840	30,930	115	1,474,272	1,554,157	2,099,263
Printing, Government ‡	4	255	87	324,537	721,835	23,540	17,642	2,507	243,097	286,786	435,049
Stereotyping, Electrotyping ‡											
Paper Making ‡											
Other ‡											
Printing, General (including Bookbinding)	95	890	382	1,052,900	3,405,032	29,906	42,541	16,665	1,224,607	1,313,719	2,091,313
Stationery and Paper Products ‡	8	105	46	130,038	885,646	4,443	4,313	5,332	515,572	529,660	355,986
Cardboard Boxes, Cartons and Containers ‡	5	177	14	243,066	429,954	7,902	3,297	101	56,064	67,364	362,590
Process and Photo-engraving	10	71	65	102,011	763,671	3,638	9,121	1,569	508,785	523,113	240,558
Paper Bags											
Total	139	2,279	627	2,853,800	9,859,558	118,269	107,844	26,289	4,022,397	4,274,799	5,584,759
Class XIII—Rubber											
Rubber Goods (including Tyre Making) ‡	46	234	30	243,979	1,296,922	30,386	26,306	593	585,432	642,717	654,205
Tyre Retreading and Repairing ‡											
Total	46	234	30	243,979	1,296,922	30,386	26,306	593	585,432	642,717	654,205
Class XIV—Musical Instruments											
Pianos, Piano-players, Organs, etc. ‡	8	31	1	22,123	52,517	355	39		16,268	16,662	35,855
Other ‡											
Total	8	31	1	22,123	52,517	355	39		16,268	16,662	35,855
Class XV—Miscellaneous Products											
Plastic Moulding and Products ‡	17	164	77	177,797	652,506	9,340	10,867	6,100	329,052	355,359	297,147
Brooms and Brushes ‡											
Optical Instruments and Appliances ‡											
Surgical and Other Scientific Instruments and Appliances ‡	27	122	15	121,405	349,758	3,488	2,493	709	127,001	133,691	216,067
Photographic Material, Developing, etc.	15	40	81	68,909	190,080	3,588	2,536	1,636	49,585	57,345	132,735
Toys, Games and Sports Requisites	7	17	1	8,000	42,378	293	183	642	18,212	19,330	23,048
Other	8	36	2	31,841	158,438	6,123	3,742	1,303	88,013	99,181	59,257
Total	74	379	176	407,952	1,393,160	22,832	19,821	10,390	611,863	664,906	728,254
Total, Classes I to XV	4,326	42,987	6,825	44,916,220	233,986,861	6,613,301	3,657,279	6,115,298	124,407,250	140,793,128	93,193,733
Class XVI—Heat, Light and Power											
Electric Light and Power—											
Government	11	680	8	887,015	5,800,968	2,309,233	202,575		20,071	2,531,879	3,269,089
Local Authority	37	96	1	118,120	558,499	214,680	26,836		603	242,119	316,380
Companies	41	261	6	310,624	2,131,691	1,098,553	142,230		9,418	1,250,201	881,490
Gas Works—											
Government ‡	3	169		188,198	1,015,866	132,137	33,300	2,497	467,206	635,140	380,726
Companies ‡											
Total	92	1,206	15	1,503,957	9,507,024	3,754,603	404,941	2,497	497,298	4,659,339	4,847,685
GRAND TOTAL	4,418	44,193	6,840	46,420,177	243,493,885	10,367,904	4,062,220	6,117,795	124,904,548	145,452,467	98,041,418

(*a*) Includes working proprietors. (*b*) Excludes amounts drawn by working proprietors. (*c*) See *Explanatory Notes and Definitions* on page 298. ‡ Separate particulars not available for publication. See note (*c*).

Government Factories

The activities of factories operated by the Commonwealth and State Governments and by government instrumentalities are included in the tables appearing elsewhere in this Part but are summarized in the following table in order to trace their development from 1952–53 to 1961–62. The factory activities of local government authorities are excluded from this table but are included in all other tables.

The figures shown relate to work done in the repair and maintenance of government plant and equipment ; other factory activities, associated with meat treatment, charcoal-iron production, printing and sawmilling ; and the operations of the principal electricity and gas undertakings, which are conducted by the State Government. The activities of the trading concern formerly known as State Building Supplies, which produced bricks, sawn timber and joinery, and the Western Australian Government Railways sawmill at Banksiadale are included in the table for the years 1952–53 to 1960–61. These undertakings were sold to private interests on the 30th June, 1961.

SUMMARY OF GOVERNMENT FACTORY ACTIVITY

Year	Number of Factories	Persons Employed (Average over whole year)			Salaries and Wages Paid		
		Males	Females	Total	Males	Females	Total
					£	£	£
1952–53	86	6,897	149	7,046	4,921,224	65,516	4,986,740
1953–54	92	7,265	156	7,421	5,442,440	72,349	5,514,789
1954–55	100	7,705	163	7,868	6,172,691	79,342	6,252,033
1955–56	111	8,104	172	8,276	6,814,468	76,598	6,891,066
1956–57	118	8,124	165	8,289	6,831,587	78,957	6,910,544
1957–58	119	8,298	170	8,468	7,091,855	84,425	7,176,280
1958–59	141	8,674	176	8,850	7,703,669	87,955	7,791,624
1959–60	142	8,378	178	8,556	7,884,870	92,045	7,976,915
1960–61	151	8,228	172	8,400	8,164,998	94,999	8,259,997
1961–62	129	7,167	177	7,344	7,317,839	109,023	7,426,862

Year	Value of Output	Cost of—			Net Production (*b*)	Book Values of—	
		Power, Fuel, Light, Water and Lubricants Used	Materials Used and Repairs to Buildings and Plant, etc. (*a*)	Total		Land and Buildings	Plant and Machinery
	£	£	£	£	£	£	£
1952–53	14,268,007	2,144,909	4,615,230	6,760,139	7,507,868	5,258,135	9,660,402
1953–54	15,697,399	2,484,466	4,951,639	7,436,105	8,261,294	5,784,878	11,162,565
1954–55	17,320,780	2,850,341	5,206,954	8,057,295	9,263,485	6,578,604	11,952,216
1955–56	19,121,175	2,894,829	5,926,963	8,821,792	10,299,383	5,342,866	13,223,046
1956–57	19,360,434	2,997,873	6,008,361	9,006,234	10,354,200	5,864,520	17,189,454
1957–58	19,512,080	2,876,936	5,843,179	8,720,115	10,791,965	5,830,999	19,371,066
1958–59	21,099,864	3,028,438	6,376,859	9,405,297	11,694,567	7,641,522	19,362,549
1959–60	22,508,725	3,261,412	6,732,860	9,994,272	12,514,453	8,182,149	19,320,615
1960–61	23,195,155	3,435,838	6,717,130	10,152,968	13,042,187	8,455,124	19,554,022
1961–62	21,097,124	3,168,455	6,065,253	9,233,708	11,863,416	8,394,788	17,885,340

(*a*) Including non-returnable containers. (*b*) See *Explanatory Notes and Definitions* on page 298.

Articles Produced and Materials Used

The following table lists some of the principal products of secondary industry in the State and shows the quantities produced in each of the five years from 1957–58 to 1961–62. As the list does not include all items manufactured, it should not be regarded as necessarily giving an accurate assessment of factory development as a whole. However, as production is expressed in terms of physical units, individual items may be compared over the years reviewed without considering price changes.

Items in which production has risen during these years include aerated waters, which has increased by 31 per cent. since 1957–58 ; cheese, 34 per cent. ; electricity, 34 per cent. ; pig-iron, 202 per cent. ; ready-mixed paints and enamels (excluding water paints), 33 per cent. ; raw and refined tallow (including dripping), 56 per cent. ; men's and youths' sports trousers, 70 per cent. ; and tyre retreads, 31 per cent. However, there have been many fluctuations over the period reviewed.

and there are numerous examples of declining production and of peak production occurring in intermediate years. Consequently a more accurate assessment of trends will be obtained by considering each of the five years shown rather than by comparing two years only.

ITEMS OF FACTORY PRODUCTION (*a*)

Commodity	Unit	1957–58	1958–59	1959–60	1960–61	1961–62
Aerated Waters	gal.	4,291,794	4,385,570	4,322,485	5,149,068	5,607,775
Bacon and Ham	lb.	6,612,477	6,619,106	7,117,467	7,084,789	7,839,387
Bath Heaters—Solid Fuel	number	5,944	5,609	6,349	5,332	5,076
Boots, Shoes and Sandals	pair	538,581	566,970	599,555	582,219	638,374
Bran	ton (2,000lb.)	34,073	32,203	33,426	34,085	28,005
Bread (2 lb. loaf)	'000	55,785	55,488	56,928	55,926	55,147
Bricks (Standard Size)—All Types	'000	111,082	101,521	110,359	119,998	119,868
Butter	'000 lb.	15,248	13,813	16,522	17,160	16,762
Cardigans, Pullovers (all types)	dozen	11,737	10,500	10,936	11,392	10,091
Cases—Fruit, Vegetable, etc. (including shooks)	number	2,163,290	2,254,057	2,320,090	2,750,983	1,984,974
Cheese	lb.	2,277,385	2,644,853	3,231,796	3,025,354	3,055,856
Coats—Sports—Men's and Youths'	number	3,993	3,611	7,599	5,301	1,195
Coke (including Coke Breeze)	ton	21,973	19,631	19,603	22,228	20,885
Cordials and Syrups	gal.	288,141	226,350	194,604	250,620	295,595
Custard Powder	lb.	693,588	693,220	715,496	779,447	‡
Electricity (*b*)	'000 kwh.	828,765	876,169	938,078	1,035,455	1,110,407
Fibrous Plaster Sheets	sq. yd.	1,505,789	1,349,280	1,422,618	1,494,263	1,446,494
Flour—Ordinary	ton (2,000lb.)	148,148	139,702	150,774	168,237	141,103
Self-raising	cwt.	87,607	85,467	86,694	80,237	79,553
Gas (Town) (*c*)	'000 cub. ft.	1,419,518	1,417,953	1,433,202	1,449,928	1,403,223
Ice	ton	14,426	11,710	8,049	8,767	10,629
Iron—Pig-Iron	,,	16,505	24,330	47,536	52,262	49,786
Jelly Crystals	lb.	1,040,788	941,118	908,997	930,717	996,516
Lime (Quicklime)	ton	27,900	22,983	23,280	28,045	28,653
Macaroni, Spaghetti, Vermicelli	cwt.	‡	24,145	21,907	23,671	20,524
Mattresses—Soft Filled (*d*)	number	41,258	36,597	38,643	31,809	30,756
Paints and Enamels (*e*)	gal.	307,846	302,229	367,119	363,051	410,289
Pickles and Chutneys	pint	500,802	469,789	474,799	462,020	320,593
Plaster of Paris	ton	17,900	15,104	16,905	18,792	17,933
Pollard	ton (2,000lb.)	26,061	24,320	25,539	25,838	21,417
Pyjamas—Men's and Boys' (*f*)	dozen	11,243	12,900	11,977	12,398	10,106
Sauce (all types)	pint	753,172	730,498	802,536	906,562	826,127
Shirts (all types)—Men's and Boys'	dozen	52,767	54,125	62,043	53,562	56,084
Sleepers, Railway—Sawn	'000 sup. ft.	48,679	57,898	43,262	40,536	51,704
Slippers	pair	286,176	233,762	163,040	132,077	119,521
Soap and Soap Substitutes (*g*)	cwt.	79,992	79,323	76,668	58,786	58,072
Steel, Structural Fabricated	ton	15,644	13,308	18,381	21,751	23,996
Stock and Poultry Foods—Meat and Bone Meal	cwt.	173,543	195,762	226,246	201,792	220,296
Suits—Men's and Youths'—2 and 3 piece	number	17,664	15,624	17,495	15,957	13,020
Sulphuric Acid	ton	208,355	192,077	226,376	234,540	237,860
Superphosphate	ton	578,781	529,799	629,040	660,501	672,256
Tallow (Raw and Refined) (*h*)	cwt.	110,060	136,885	153,982	158,427	171,989
Tiles (Roofing)—Cement	'000	6,792	5,740	5,599	4,086	3,987
Timber (from local logs)—Sawn (*i*)	'000 sup. ft.	201,664	211,832	198,903	186,911	192,789
Trousers—Men's and Youths'—Sports	number	59,228	59,684	75,231	83,711	100,757
Work	,,	156,202	160,206	180,904	165,353	140,069
Tyres (Retreaded)	,,	135,726	134,262	144,496	150,609	177,173
Vinegar (including Bulk)	gal.	166,868	215,254	189,271	195,513	151,819
Wool—Scoured	'000 lb.	25,812	28,199	33,668	29,586	31,878

(*a*) Some major items of production are not available for publication. (*b*) Total generated—*see* page 323 for electricity distributed. (*c*) Total made—*see* page 323 for gas distributed. (*d*) Includes rubber, plastic foam and sponge. (*e*) Ready mixed, excluding water paints. (*f*) Woven fabric. (*g*) Includes detergents. (*h*) Includes dripping. (*i*) Includes railway sleepers (*see* separate item above) and plywood veneers in terms of super. feet. ‡ Not available for publication.

The consumption of various materials in specific industries is shown in the following table for the years 1957–58 to 1961–62. As in the preceding table, figures are in terms of physical units and particulars for individual items may therefore be directly compared over the period reviewed without considering price changes which might have occurred. However, they do not necessarily represent total factory consumption of the materials shown, as information is not available or cannot be published for some industries.

INDIVIDUAL INDUSTRIES

The tables on pages 315–21, which appear in the industry order shown in the table on pages 307–11, deal with factory activity in selected industries for each of the ten years from 1952–53 to 1961–62. When considering employment, salaries and wages, value of output and net production, reference should be made to the section *Explanatory Notes and Definitions* on page 298.

MATERIALS USED IN FACTORIES

Item	Industry or Process in which Used	Unit	1957–58	1958–59	1959–60	1960–61	1961–62
Canvas and Duck—Cotton and Flax	Canvas Goods	sq. yd.	*370,677	393,494	380,974	457,690	499,481
Cement	Cement Goods (excl. Asbestos-Cement Goods)	ton	36,140	44,914	50,047	61,130	66,567
Coal—Fuel	Total Factory Consumption	,,	562,456	581,979	606,566	493,993	621,322
Gas Making	Gas Works	,,	54,388	52,206	52,436	47,635	50,844
Colours—Inorganic (excl. Natural Earths)	Paints	cwt.	(a)	1,533	1,786	2,083	2,160
Eggs	Egg Pulping	dozen	2,342,087	1,229,032	881,450	996,090	623,285
Flour—Ordinary	Bakeries	150 lb. bag	557,016	559,520	576,492	565,654	565,110
	Biscuits, Confectionery, Ice Cream	,,	42,907	43,936	43,652	43,800	‡
	Macaroni, Spaghetti, Cereals	,,	21,267	21,427	16,853	16,933	15,760
	Self-raising Flour	,,	62,159	62,665	63,146	58,107	59,733
Fruit (excluding Grapes for Wine)	Jams, Essential Oils, Canniug, etc.	cwt.	82,583	46,684	58,924	101,493	49,171
Grapes—Fresh	Wine Making	ton	3,724	3,166	4,410	4,124	4,543
Gypsum	Lime, Plaster and Cement	,,	28,493	26,459	28,845	32,022	30,885
Hides (all kinds)	Tanning	number	106,416	96,286	97,641	79,407	83,112
Leather—By weight	Saddlery, Bags, Boots and Shoes	lb.	1,022,521	1,059,003	980,511	921,797	731,655
By area	Boot Accessories and Repairing	sq. ft.	1,713,727	1,765,887	1,787,736	1,642,082	2,112,811
Linseed Oil	Paints	gal.	32,700	27,178	30,509	27,727	27,381
Meatmeal (incl. Whale Meal and Solubles)	Animal and Bird Foods	ton	2,896	2,876	3,447	3,874	4,522
Paper—Newsprint	Newspapers, Other Printing	,,	12,408	13,080	14,322	‡	‡
Cardboard	Boxes, General Printing, etc.	,,	2,491	2,695	4,326	5,664	6,480
Phosphate Rock	Chemical Fertilizers	,,	368,521	335,237	398,656	413,544	423,001
Plaster of Paris	Fibrous Plaster and Products	,,	14,639	13,778	13,228	17,964	15,208
Rubber	Tyre Repairing	lb.	1,259,187	1,313,099	1,454,558	1,598,360	1,727,407
Soda Ash	Bottle Making and Soaps	cwt.	43,299	50,182	56,908	‡	‡
Sugar—Refined	Aerated Waters	70 lb. bag	73,078	85,767	74,521	88,891	98,217
	Bakeries	,,	23,987	24,798	25,239	24,800	24,715
	Biscuits, Condenseries, Ice Cream	,,	86,195	88,904	74,874	75,144	76,157
	Jams, Pickles, Sauces	,,	13,223	14,425	14,142	13,938	17,497
	Manufacturing Grocers	,,	50,346	56,678	59,002	57,814	54,105
Sulphur	Chemical Fertilizers	ton	47,123	42,117	52,462	54,596	57,539
Tallow	Soap and Candles, etc.	cwt.	34,665	33,686	31,965	‡	‡
Tanning Extract	Tanning	ton	756	650	596	544	442
Timber (Local)—							
Logs—Hardwoods	Sawmills, Plywood Mills, etc.	'000 sup. ft.(b)	483,948	511,133	472,644	440,257	472,126
Pines	,, ,, ,,	,,	11,300	12,228	11,886	11,736	14,184
Tomatoes	Pickles, Jams, Sauces	cwt.	14,156	30,178	28,147	26,769	37,503
Vegetables	,, ,,	,,	12,098	4,689	8,039	13,243	11,539
Wheat	Flour Mills, Stock Foods, etc.	bushel	7,846,454	7,427,510	7,890,360	7,989,182	6,790,164
Wool—Greasy	Wool Scouring	lb.	43,673,649	47,067,606	55,765,652	49,727,711	53,159,202
Yarn—Cotton	Knitting Mills, Rope Works, etc.	,,	70,180	75,348	71,304	‡	‡
Worsted and Woollen	Knitting Mills	,,	151,254	134,165	123,348	131,387	151,544

‡ Not available for publication. (a) Not available. (b) Hoppus measure. * Revised.

INDIVIDUAL INDUSTRIES

LIME, PLASTER AND PLASTER SHEETS

Year	Number of Factories	Land, Buildings, Plant and Machinery (*a*)	Engines and Electric Motors Used (*b*)	Persons Employed	Salaries and Wages	Power, Fuel and Light Used (*c*)	Repairs, Containers and Materials Used	Value of Output	Net Production	Materials Used				Production (*d*)			
										Sisal Hemp and Substitutes		Limestone		Fibrous Plaster Sheets		Lime (Quicklime)	
		£	rated h.p.		£	£	£	£	£	tons	£	tons	£	sq. yds.	£	tons	£
1952–53	46	198,039	969	575	375,751	74,987	702,118	1,340,335	563,230	1,260	95,137	60,965	26,150	2,436,220	531,865	25,384	204,948
1953–54	46	282,887	969	595	422,957	75,807	759,768	1,452,354	616,779	1,445	109,100	53,164	23,395	2,348,624	552,516	22,594	198,763
1954–55	49	368,141	1,129	632	467,408	83,143	809,712	1,639,844	746,989	1,475	113,904	54,135	32,433	2,517,204	614,526	25,505	230,813
1955–56	51	456,495	1,310	573	450,726	85,731	783,518	1,552,602	683,353	1,199	93,939	51,651	30,386	2,171,929	518,330	25,649	224,465
1956–57	54	473,164	1,326	482	368,431	83,437	698,712	1,445,239	663,090	832	74,452	56,436	33,976	1,491,998	363,526	25,759	221,733
1957–58	51	501,864	1,759	478	373,075	92,934	683,477	1,484,782	708,371	737	68,820	53,139	31,051	1,505,789	402,847	27,900	215,525
1958–59	54	571,305	2,231	453	380,721	88,849	735,427	1,597,465	723,189	691	64,225	43,701	33,971	1,349,280	372,008	22,983	182,191
1959–60	57	682,652	2,236	483	410,582	80,151	772,726	1,626,032	773,205	*710	79,313	46,836	31,207	1,422,618	396,841	23,280	171,286
1960–61	58	753,449	2,859	457	415,466	90,926	877,098	1,766,464	798,440	789	93,891	62,122	41,518	1,494,263	434,393	28,045	226,904
1961–62	58	795,525	3,114	456	434,515	99,656	881,964	1,843,665	862,045	750	88,477	64,053	37,076	1,446,494	410,468	28,653	223,900

(*a*) Book values at end of year. (*b*) Excludes motors driven by electricity of own generation. (*c*) Includes water and lubricants. (*d*) Includes quantities produced in factories classified to other industries. * Revised.

CEMENT AND CEMENT GOODS (INCLUDING ASBESTOS CEMENT SHEETS)

Year	Number of Factories	Land, Buildings, Plant and Machinery (*a*)	Engines and Electric Motors Used (*b*)	Persons Employed	Salaries and Wages	Power, Fuel and Light Used (*c*)	Repairs, Containers and Materials Used	Value of Output	Net Production	Materials Used				Production (*e*) (*f*)			
										Reinforcing Steel		Cement (*d*)		Cement Roofing Tiles		Cement Bricks	
		£	rated h.p.		£	£	£	£	£	tons	£	tons	£	'000	£	'000	£
1952–53	68	827,347	7,689	1,063	737,977	453,769	1,278,564	3,049,156	1,316,823	1,141	45,201	26,113	320,300	11,738	396,559	3,522	51,846
1953–54	57	733,406	8,634	1,015	790,937	580,489	1,419,013	3,574,567	1,575,065	1,082	44,626	26,798	315,993	9,588	356,915	5,066	59,475
1954–55	54	935,064	9,169	1,179	952,847	654,141	1,954,401	4,370,509	1,761,967	1,797	101,362	36,179	450,063	11,082	375,194	8,740	106,080
1955–56	52	2,806,711	13,510	1,146	948,743	660,872	1,735,117	4,137,966	1,741,977	1,657	91,003	32,708	383,331	7,489	224,884	3,159	34,451
1956–57	48	2,654,404	13,148	898	774,128	513,440	1,488,746	3,914,547	1,912,361	1,613	80,409	29,686	353,117	5,716	215,687	1,973	20,780
1957–58	48	2,569,490	13,099	877	747,088	433,877	1,538,255	4,010,774	2,038,642	1,233	62,386	31,881	386,330	6,792	223,040	1,904	20,792
1958–59	53	2,653,395	13,009	899	782,767	405,816	1,697,143	4,228,296	2,125,337	1,239	66,970	42,174	486,567	5,740	180,675	1,300	13,905
1959–60	55	2,707,275	13,348	929	867,691	379,769	1,805,259	4,361,077	2,176,049	1,533	79,704	47,257	559,975	5,599	173,794	‡	‡
1960–61	64	3,264,282	14,242	957	955,267	383,899	2,119,100	5,059,072	2,556,073	1,826	94,668	58,944	704,476	4,086	155,451	‡	‡
1961–62	63	3,466,704	14,641	1,012	1,053,644	388,377	2,227,437	5,452,914	2,837,100	2,377	122,849	63,619	737,286	3,987	164,104	‡	‡

(*a*) Book values at end of year. (*b*) Excludes motors driven by electricity of own generation. (*c*) Includes water and lubricants. (*d*) Excludes quantities used in production of asbestos cement sheets. (*e*) Includes quantities produced in factories classified to other industries. (*f*) Certain major items of production are not available for publication. ‡ Not available for publication.

BRICKS, TILES, EARTHENWARE, PORCELAIN, ETC. (a)

Year	Number of Factories	Land, Buildings, Plant and Machinery (b)	Engines and Electric Motors Used (c)	Persons Employed	Salaries and Wages	Power, Fuel and Light Used (d)	Repairs, Containers and Materials Used	Value of Output	Net Production	Production (e)		
										Bricks—Standard Clay (f)		Fire Bricks and Blocks
		£	rated h.p.		£	£	£	£	£	No.	£	£
1952–53	37	1,629,851	8,450	1,075	764,328	357,880	271,654	1,900,946	1,271,412	82,521,000	1,011,435	93,856
1953–54	38	1,777,525	8,443	1,202	904,749	424,224	341,933	2,355,089	1,588,932	96,174,000	1,205,084	90,021
1954–55	37	2,059,134	8,770	1,273	1,032,742	493,459	394,122	2,576,199	1,688,618	106,672,000	1,340,708	95,379
1955–56	36	2,084,303	9,413	1,181	988,844	483,470	403,961	2,453,213	1,565,782	96,247,000	1,233,589	88,289
1956–57	34	2,012,488	9,200	1,017	849,523	388,396	355,114	2,191,459	1,447,949	90,542,000	1,249,748	59,387
1957–58	32	1,973,485	9,637	1,092	971,373	438,422	400,026	2,518,376	1,679,928	101,070,000	1,422,412	72,376
1958–59	31	1,884,432	9,551	1,034	905,669	396,067	369,720	2,356,621	1,590,834	93,194,000	1,349,692	65,063
1959–60	30	1,742,275	9,637	1,013	928,506	393,565	368,018	2,509,486	1,747,903	100,462,000	1,518,907	‡‡‡‡‡
1960–61	30	1,762,385	9,714	1,069	1,037,750	449,918	428,313	2,749,202	1,870,971	105,993,000	1,660,560	‡‡‡‡‡
1961–62	31	1,397,071	10,826	1,028	1,061,469	418,406	430,049	2,768,994	1,920,539	‡	‡	‡‡‡‡‡

(a) Excludes cement bricks and cement roofing tiles. *See* preceding table. (b) Book values at end of year. (c) Excludes motors driven by electricity of own generation.
(d) Includes water and lubricants. (e) Certain major items of production are not available for publication. (f) Excludes fire bricks. ‡ Not available for publication.

CHEMICAL FERTILIZERS

Year	Number of Factories	Land, Buildings, Plant and Machinery (a)	Engines and Electric Motors Used (b)	Persons Employed	Salaries and Wages	Power, Fuel and Light Used (c)	Repairs, Containers and Materials Used	Value of Output	Net Production	Materials Used						Production of Superphosphate	
										Phosphate Rock		Sulphur		Pyrites			
		£	rated h.p.		£	£	£	£	£	tons	£	tons	£	tons	£	tons	£
1952–53	5	1,519,560	4,543	901	725,571	128,668	5,087,817	6,791,432	1,574,947	264,949	1,856,840	27,629	726,084	54,584	641,119	417,727	6,359,903
1953–54	5	3,048,785	4,864	889	769,629	126,291	4,827,575	6,514,091	1,560,225	270,121	1,716,730	26,924	598,063	57,309	737,344	428,314	5,801,559
1954–55	6	4,070,938	7,533	1,004	874,866	141,461	4,882,795	6,968,260	1,944,004	296,554	1,847,768	31,470	647,995	60,137	659,918	472,787	5,937,274
1955–56	6	4,032,936	7,684	977	883,741	145,425	5,009,249	7,561,183	2,406,509	300,836	2,006,032	35,492	751,725	53,279	583,490	463,413	6,110,109
1956–57	6	3,861,954	8,180	942	839,228	149,561	5,428,211	7,601,544	2,023,772	307,102	2,301,583	32,201	702,807	67,097	599,460	482,049	6,463,954
1957–58	6	3,758,202	8,050	1,004	1,008,278	165,192	6,413,050	8,789,054	2,210,812	368,521	3,010,033	47,123	976,512	‡	‡	578,781	7,756,160
1958–59	6	3,801,536	8,819	975	955,928	152,000	5,394,113	7,517,626	1,971,513	335,237	2,384,582	42,117	757,017	‡	‡	529,799	6,630,673
1959–60	6	3,649,470	9,334	927	948,278	169,441	5,992,846	8,644,052	2,481,765	398,656	2,840,856	52,462	880,471	‡	‡	629,040	7,681,751
1960–61	6	3,700,113	9,932	984	1,045,583	162,678	6,353,525	9,129,371	2,613,168	413,544	2,841,190	54,596	857,452	‡	‡	660,501	7,966,950
1961–62	7	3,867,699	9,676	986	1,091,405	153,661	6,485,197	9,233,498	2,594,640	423,001	2,902,904	57,539	901,985	‡	‡	672,256	7,903,407

(a) Book values at end of year. (b) Excludes motors driven by electricity of own generation. (c) Includes water and lubricants. ‡ Not available for publication.

ENGINEERING, METAL WORKING, CONSTRUCTION AND REPAIR OF VEHICLES AND MACHINES

Year	Number of Factories	Land, Buildings, Plant and Machinery (*a*)	Engines and Electric Motors Used (*b*)	Persons Employed	Salaries and Wages	Power, Fuel and Light Used (*c*)	Repairs, Containers and Materials Used	Value of Output	Net Production
		£	rated h.p.		£	£	£	£	£
1952–53	1,189	9,841,425	41,741	16,888	10,678,834	641,996	13,413,925	30,082,060	16,026,139
1953–54	1,264	11,910,696	45,617	18,241	12,408,098	720,419	17,191,647	36,909,513	18,997,447
1954–55	1,381	13,719,254	48,913	18,726	13,586,572	764,060	17,366,152	39,387,318	21,257,106
1955–56	1,484	15,400,934	51,787	19,410	14,769,312	887,884	18,337,160	41,190,699	21,965,655
1956–57	1,564	19,661,970	65,267	19,490	15,030,186	1,008,276	20,552,495	44,836,239	23,275,468
1957–58	1,609	20,720,552	67,817	19,549	15,450,376	1,046,329	22,430,241	47,850,836	24,374,266
1958–59	1,754	21,968,039	69,505	19,380	15,606,009	1,102,185	22,292,581	48,332,547	24,937,781
1959–60	1,869	22,936,958	73,456	20,494	17,204,712	1,385,869	27,426,177	56,517,493	27,705,447
1960–61	1,924	24,812,174	75,887	21,124	18,919,518	1,466,875	30,499,033	63,194,722	31,228,814
1961–62	2,006	26,348,780	77,802	21,528	19,618,224	1,457,422	33,827,082	68,683,146	33,398,642

(*a*) Book values at end of year. (*b*) Excludes motors driven by electricity of own generation. (*c*) Includes water and lubricants.

BOOTS AND SHOES

Year	Number of Factories	Land, Buildings, Plant and Machinery (*a*)	Engines and Electric Motors Used (*b*)	Persons Employed	Salaries and Wages	Power, Fuel and Light Used (*c*)	Repairs, Containers and Materials Used	Value of Output	Net Production	Leather Used				Production (*d*)			
										Purchased by Weight		Purchased by Area		Boots, Shoes and Sandals		Slippers	
		£	rated h.p.		£	£	£	£	£	lb.	£	sq. ft.	£	pairs	£	pairs	£
1952–53	10	234,523	606	738	427,187	7,833	538,515	1,086,129	539,781	1,232,456	166,389	1,624,920	167,032	600,072	844,481	444,725	251,575
1953–54	11	272,359	595	767	444,048	8,548	596,840	1,203,179	597,791	1,294,086	175,566	2,084,542	200,507	650,207	865,640	624,313	341,850
1954–55	11	281,691	589	634	395,058	7,914	481,114	1,029,869	540,841	1,030,911	154,430	1,491,570	156,658	556,275	762,603	398,590	281,736
1955–56	10	290,214	495	607	382,590	7,557	521,581	1,015,621	486,483	1,057,220	154,710	1,647,141	182,471	551,871	772,590	408,081	253,980
1956–57	11	293,812	600	592	383,380	6,989	439,287	975,796	529,520	817,516	118,311	1,273,551	158,697	559,679	755,425	373,138	245,298
1957–58	11	266,061	563	503	335,179	6,532	402,792	891,687	482,363	692,465	106,493	1,190,615	158,184	538,581	735,027	286,176	224,639
1958–59	12	307,589	575	512	332,796	6,586	448,746	881,616	426,284	755,213	120,779	1,294,116	185,852	566,970	743,210	233,762	185,530
1959–60	11	340,992	489	523	370,848	6,484	529,557	1,039,214	503,173	739,649	134,302	1,245,599	234,844	599,555	890,642	163,040	142,867
1960–61	12	409,616	715	457	332,180	7,179	491,490	989,598	490,929	658,085	118,781	1,240,112	223,289	582,219	840,793	132,077	125,809
1961–62	13	331,990	668	502	352,421	8,269	563,920	1,081,543	509,354	543,931	98,463	1,580,589	292,222	638,374	931,411	119,521	123,923

(*a*) Book values at end of year. (*b*) Excludes motors driven by electricity of own generation. (*c*) Includes water and lubricants. (*d*) Includes quantities produced in factories classified to other industries.

FLOUR MILLING

Year	Number of Factories	Land, Buildings, Plant and Machinery (a)	Engines and Electric Motors Used (b)	Persons Employed	Salaries and Wages	Power, Fuel and Light Used (c)	Repairs, Containers and Materials Used	Value of Output	Net Production	Wheat Ground		Production (d)					
												Flour		Bran		Pollard	
		£	rated h.p.		£	£	£	£	£	bushels	£	tons (e)	£	tons (e)	£	tons (e)	£
1952–53	20	1,262,820	5,720	571	467,792	135,252	7,038,874	8,025,194	851,068	10,382,390	5,919,793	224,330	5,989,491	49,283	985,332	38,364	762,977
1953–54	20	1,300,525	5,260	543	439,385	125,181	6,752,569	7,712,595	834,845	8,838,076	6,025,809	187,958	5,608,602	41,793	855,256	31,314	639,019
1954–55	20	1,358,308	5,060	507	416,199	110,402	6,250,307	7,066,426	705,717	8,078,907	5,658,970	165,767	5,029,848	37,640	790,173	27,118	568,883
1955–56	20	1,396,394	5,689	510	433,983	116,616	6,402,018	7,241,128	722,494	8,601,658	5,781,472	179,362	5,315,746	41,489	799,373	29,018	558,250
1956–57	20	1,410,330	5,407	504	422,152	114,727	6,279,916	7,153,598	758,955	8,318,043	5,678,022	169,535	5,236,955	39,178	767,341	29,274	574,005
1957–58	19	1,329,433	5,537	455	394,617	103,941	5,658,883	6,560,287	797,463	7,392,991	5,158,962	148,148	4,744,142	34,073	681,195	26,061	520,412
1958–59	20	1,305,728	5,280	428	385,789	100,726	5,535,935	6,409,901	773,240	7,125,484	5,102,678	139,702	4,549,315	32,203	627,994	24,320	470,082
1959–60	18	1,279,382	5,151	396	405,445	109,316	6,012,513	6,907,902	786,073	7,577,149	5,556,627	150,774	4,976,596	33,426	659,487	25,539	503,307
1960–61	18	1,170,840	5,149	433	421,245	108,809	6,294,695	7,253,297	849,793	7,612,425	5,703,017	168,237	5,849,356	34,085	669,697	25,838	516,264
1961–62	16	1,139,619	5,049	379	376,623	91,042	5,331,169	6,223,549	801,338	6,285,090	4,851,521	141,103	5,045,714	28,005	546,797	21,417	432,331

(a) Book values at end of year. (b) Excludes motors driven by electricity of own generation. (c) Includes water and lubricants. (d) Includes quantities used in own works. (e) Short ton = 2,000 lb.

CONFECTIONERY

Year	Number of Factories	Land, Buildings, Plant and Machinery (a)	Engines and Electric Motors Used (b)	Persons Employed	Salaries and Wages	Power, Fuel and Light Used (c)	Repairs, Containers and Materials Used	Value of Output	Net Production	Materials Used				Confectionery (not Chocolate) Produced (d) (e)	
										Sugar (70 lb. bags)		Glucose			
		£	rated h.p.		£	£	£	£	£	No.	£	cwt.	£	lb.	£
1952–53	8	179,332	473	328	148,012	17,058	396,014	675,534	261,562	48,222	103,614	10,703	56,023	3,887,845	484,585
1953–54	8	166,527	479	314	168,169	17,589	432,757	755,813	305,467	46,855	104,489	8,697	46,715	3,451,985	486,365
1954–55	7	148,344	477	321	167,548	17,282	458,521	789,460	313,657	48,370	107,855	9,663	53,470	3,824,736	534,505
1955–56	7	154,255	447	325	179,065	16,165	409,295	732,856	307,396	46,170	103,025	9,416	47,893	3,623,968	480,383
1956–57	6	159,418	469	299	176,637	15,754	465,441	788,275	307,080	46,710	118,563	10,555	53,710	4,083,190	534,752
1957–58	7	175,102	420	297	185,089	16,317	502,955	846,031	327,659	50,432	124,863	11,415	56,427	4,321,505	552,838
1958–59	6	177,603	496	264	179,461	15,484	551,516	929,586	362,586	48,928	121,709	11,004	60,150	4,775,103	626,512
1959–60	6	173,366	501	268	185,141	18,232	588,337	984,663	378,094	‡	‡	‡	‡	‡	‡
1960–61	6	197,301	501	292	206,683	22,782	594,437	961,825	344,606	‡	‡	‡	‡	‡	‡
1961–62	6	191,962	529	259	196,326	19,856	583,628	968,039	364,555	‡	‡	‡	‡	‡	‡

(a) Book values at end of year. (b) Excludes motors driven by electricity of own generation. (c) Includes water and lubricants. (d) Includes quantities produced in factories classified to other industries. (e) Certain major items of production are not available for publication. ‡ Not available for publication.

JAMS, PICKLES, SAUCES AND VINEGAR

Year	Number of Factories	Land, Buildings, Plant and Machinery (a)	Engines and Electric Motors Used (b)	Persons Employed	Salaries and Wages	Power, Fuel, and Light Used (c)	Repairs, Containers and Materials Used	Value of Output	Net Production	Materials Used				Production					
										Fruit		Vegetables (d)		Jams (e)		Pickles and Chutneys		Sauces	
		£	rated h.p.		£	£	£	£	£	cwt.	£	cwt.	£	lb.	£	pints	£	pints	£
1952–53	11	133,945	368	128	76,773	5,872	231,126	387,871	150,873	16,827	13,116	4,436	19,277	1,119,212	74,167	527,461	63,065	830,499	68,605
1953–54	11	152,680	371	139	78,278	5,424	218,170	368,265	144,671	9,152	12,014	8,098	26,478	733,451	49,017	673,583	79,023	692,397	57,721
1954–55	12	172,733	283	126	76,216	5,322	219,569	358,532	133,641	6,737	13,318	13,027	32,693	597,451	36,585	663,607	72,026	654,566	57,951
1955–56	9	177,369	278	139	85,566	6,246	305,896	485,348	173,206	23,143	25,697	27,108	53,517	743,561	44,341	454,458	64,020	760,127	77,749
1956–57	9	185,493	337	151	98,389	7,575	398,795	614,466	208,096	15,901	19,634	22,005	65,648	589,535	41,646	475,287	68,522	699,700	78,701
1957–58	9	212,515	349	124	83,423	6,700	295,059	490,583	188,824	31,783	33,292	12,098	33,968	‡	‡	500,802	66,075	753,172	90,576
1958–59	9	213,538	378	118	85,139	8,635	286,682	491,018	195,701	21,982	25,595	4,689	13,121	‡	‡	469,789	64,903	730,498	88,161
1959–60	9	221,778	370	129	94,032	8,474	319,813	540,742	212,455	23,330	28,966	8,039	17,750	‡	‡	474,799	68,839	802,536	100,582
1960–61	9	228,134	450	147	116,519	10,127	445,942	669,394	213,325	53,407	66,704	13,243	38,106	‡	‡	462,020	76,354	906,562	90,174
1961–62	9	266,880	437	158	119,946	9,290	485,694	761,835	266,851	28,341	41,981	11,539	37,957	‡	‡	320,593	51,665	826,127	69,494

(a) Book values at end of year. (b) Excludes motors driven by electricity of own generation. (c) Includes water and lubricants. (d) Excludes tomatoes. (e) Includes quantities produced in factories classified to other industries. ‡ Not available for publication.

BACON CURING

Year	Number of Factories	Land, Buildings, Plant and Machinery (a)	Engines and Electric Motors Used (b)	Persons Employed	Salaries and Wages	Power, Fuel and Light Used (c)	Repairs, Containers and Materials Used	Value of Output	Net Production	Pigs Killed (d)					Bacon and Ham Produced (e)	
										On own Account				On Commission		
										For Curing	For other purposes	Total				
												Quantity	Cost at Works			
		£	rated h.p.		£	£	£	£	£	No.	No.	No.	£	No.	lb.	£
1952–53	4	174,459	919	263	180,727	35,493	2,012,212	2,307,390	259,685	76,838	12,201	89,039	1,423,237	127	8,272,455	1,310,558
1953–54	4	136,019	762	215	166,553	29,708	2,035,665	2,237,656	172,283	77,166	6,938	84,104	1,559,042	119	7,722,949	1,422,727
1954–55	4	144,938	929	254	189,145	33,350	1,835,133	2,298,546	430,063	89,681	26,667	116,348	1,352,293	341	7,427,758	1,324,813
1955–56	4	161,902	878	267	183,819	33,530	2,103,989	2,346,617	209,098	88,039	17,275	105,314	1,520,504	207	7,237,217	1,319,746
1956–57	4	170,499	841	254	195,056	35,114	2,442,110	2,814,733	337,509	94,686	11,999	106,685	1,796,753	236	6,839,975	1,478,325
1957–58	4	193,692	1,133	268	230,703	39,471	2,566,848	3,004,163	397,844	121,891	24,287	146,178	1,823,453	510	6,612,477	1,325,246
1958–59	4	234,174	1,125	301	231,858	39,280	2,449,886	2,793,304	304,138	101,893	19,651	121,544	1,582,234	276	6,619,106	1,338,924
1959–60	5	278,728	1,238	288	241,881	36,312	2,728,757	3,154,540	389,471	77,444	29,776	107,220	1,825,333	102	7,117,467	1,694,447
1960–61	4	284,280	1,314	320	296,822	37,408	3,021,012	3,579,284	520,864	66,216	49,894	116,110	1,807,186	133	7,084,789	1,590,157
1961–62	4	296,279	1,303	339	319,412	41,330	3,028,601	3,703,706	633,775	70,613	71,859	142,472	1,664,729	172	7,839,387	1,554,031

(a) Book values at end of year. (b) Excludes motors driven by electricity of own generation. (c) Includes water and lubricants. (d) Excludes pigs condemned. (e) Includes quantities produced in factories classified to other industries.

BUTTER, CHEESE AND CONDENSED AND PROCESSED MILK

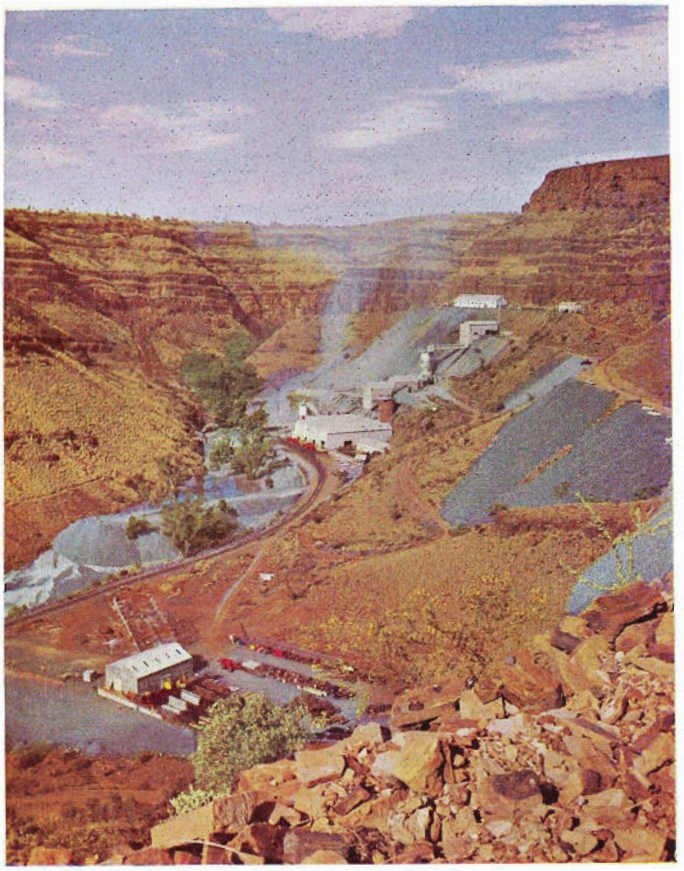
Year	Number of Factories	Land, Buildings, Plant and Machinery (*a*)	Engines and Electric Motors Used(*b*)	Persons Employed	Salaries and Wages	Power, Fuel and Light Used(*c*)	Repairs, Containers and Materials Used	Value of Output	Net Production	Materials Used				Production			
										Butter Fat Content of Cream		Total Whole Milk (*d*)		Butter		Cheese	
		£	rated h.p.		£	£	£	£	£	lb.	£	gal.	£	lb.	£	lb.	£
1952–53	15	424,033	1,876	322	241,978	70,864	3,124,819	3,745,032	549,349	11,877,898	2,205,266	33,607,143	2,625,361	14,516,018	2,625,632	2,004,514	235,165
1953–54	15	419,702	1,838	294	222,966	68,775	3,236,593	3,817,190	511,822	11,209,678	2,189,903	32,559,719	2,705,627	13,757,468	2,561,648	2,699,531	322,339
1954–55	17	537,283	3,477	286	212,371	70,109	3,286,275	3,899,864	543,480	13,077,206	2,517,304	36,147,796	2,849,704	16,005,099	2,949,481	2,426,524	293,563
1955–56	18	565,591	2,345	292	230,370	65,235	3,301,824	3,863,417	496,358	13,544,985	2,539,334	37,141,040	2,887,387	16,584,601	2,940,626	1,708,439	196,271
1956–57	18	592,123	2,393	312	248,964	70,195	3,424,743	4,024,751	529,813	13,702,685	2,538,063	38,381,870	2,957,992	16,715,523	2,946,741	2,647,935	296.430
1957–58	18	614,997	2,345	302	253,867	64,472	3,058,327	3,589,802	467,003	12,456,776	2,200,149	34,828,242	2,609,790	15,247,884	2,545,504	2,277,385	234,001
1958–59	19	825,871	3,078	325	276,877	62,548	3,032,881	3,710,224	614,795	11,265,489	2,096,622	32,073,417	2,506,101	13,812,718	2,512,933	2,644,853	306,852
1959–60	19	832,622	3,524	315	269,975	66,080	3,639,663	4,239,557	533,814	13,463,763	2,677,324	37,281,495	3,112,777	16,521,619	3,058,199	3,231,796	383,267
1960–61	19	864,218	3,844	332	295,198	74,272	3,616,828	4,320,789	629,689	14,119,248	2,645,484	38,376,477	3,003,252	17,160,334	3,073,536	3,025,354	374,428
1961–62	18	1,107,336	4,012	339	308,268	73,532	3,445,102	4,107,408	588,774	13,761,693	2,529,661	37,266,660	2,861,603	16,761,850	2,977,989	3,055,856	379,133

(*a*) Book values at end of year. (*b*) Excludes motors driven by electricity of own generation. (*c*) Includes water and lubricants. (*d*) Includes whole milk equivalent of cream used.

AERATED WATERS, CORDIALS, ETC.

Year	Number of Factories	Land, Buildings, Plant and Machinery (*a*)	Engines and Electric Motors Used (*b*)	Persons Employed	Salaries and Wages	Power, Fuel and Light Used (*c*)	Repairs, Containers and Materials Used	Value of Output	Net Production	Sugar Used (70 lb. bags)		Production (*d*)			
												Aerated Waters		Cordials and Syrups	
		£	rated h.p.		£	£	£	£	£	No.	£	gal.	£	gal.	£
1952–53	49	309,290	1,118	269	134,656	15,592	379,699	729,869	334,578	54,181	115,060	3,299,562	639,809	214,043	145,267
1953–54	48	329,142	1,168	263	161,204	15,625	398,947	833,060	418,488	56,273	129,260	3,503,029	714,922	220,446	163,717
1954–55	46	352,030	1,200	265	170,755	16,607	508,312	919,420	394,501	64,570	148,326	4,000,423	816,267	268,133	180,568
1955–56	45	441,650	1,082	281	181,337	16,012	509,444	937,490	412,034	66,814	154,241	4,041,517	834,268	281,258	213,212
1956–57	44	475,538	1,139	271	172,546	14,427	516,234	934,298	403,637	63,317	158,018	3,850,610	837,103	270,301	210,180
1957–58	45	506,761	1,200	274	179,113	17,977	583,217	1,071,495	470,301	73,078	185,834	4,291,794	967,176	288,141	221,887
1958–59	42	510,229	1,173	265	181,751	21,755	616,285	1,072,689	434,649	85 767	196,774	4,385,570	974,958	226,350	169,038
1959–60	43	526.207	1,257	269	194,073	20,663	613,939	1,029,199	394,597	74,521	191,296	4,322,485	972,451	194,604	141,590
1960–61	42	656,671	1,205	317	247,693	23,786	762,178	1,339,754	553,790	88,891	251,747	5,149,068	1,245,961	250,620	191,553
1961–62	41	695,232	1,290	311	259,781	25,738	870,375	1,505,132	609,019	98,217	272,318	5,607,775	1,388,699	295,595	215,463

(*a*) Book values at end of year. (*b*) Excludes motors driven by electricity of own generation. (*c*) Includes water and lubricants. (*d*) Includes quantities produced in factories classified to other industries.



Left—Mining blue asbestos in the wall of Wittenoom Gorge in the Hamersley Range



Right—Mining coal at the Muja open cut near Collie

SAWMILLING (MILLS OPERATING ON LOGS) (a)

Year	Number of Factories	Land, Buildings, Plant and Machinery (b)	Engines and Electric Motors Used (c)	Persons Employed	Salaries and Wages	Power, Fuel and Light Used (d)	Repairs, Containers and Materials Used	Value of Output	Net Production	Logs (Local), Sawn (e)				Sawn Timber Produced from Local Logs (f)			
										Hardwoods		Pines		Hardwoods		Pines	
		£	rated h.p.		£	£	£	£	£	'000 sup. ft. (Hoppus)	£	'000 sup. ft. (Hoppus)	£	'000 sup. ft.	£	'000 sup. ft.	£
1952–53	223	2,084,603	24,964	3,660	2,273,865	201,237	2,776,279	7,003,310	4,025,794	449,977	2,413,788	9,925	53,322	199,344	6,744,200	3,970	130,680
1953–54	224	2,085,599	27,270	3,723	2,529,310	214,231	3,166,416	7,610,750	4,230,103	481,260	2,841,502	7,164	55,359	213,723	7,365,027	2,298	84,450
1954–55	231	2,384,391	29,297	3,833	2,646,573	232,116	3,468,994	7,958,049	4,256,939	501,128	3,104,359	10,546	65,819	220,444	7,701,831	5,351	114,559
1955–56	231	2,404,418	32,545	3,872	2,770,779	229,881	3,921,537	8,774,340	4,622,922	507,608	3,525,844	11,959	90,159	216,405	8,284,892	5,993	150,328
1956–57	232	2,531,412	34,224	3,505	2,575,248	231,612	3,643,501	8,539,362	4,664,249	486,675	3,247,580	10,930	88,871	198,679	8,171,448	5,796	162,007
1957–58	217	2,204,477	33,235	3,391	2,555,528	237,253	3,743,831	8,529,198	4,548,114	483,948	3,361,382	11,300	103,159	195,773	8,271,012	5,892	161,718
1958–59	215	2,333,945	35,574	3,460	2,677,024	250,203	3,937,250	9,019,521	4,832,068	511,133	3,521,494	12,228	104,579	205,486	9,054,016	6,346	162,860
1959–60	208	2,237,198	35,212	3,189	2,558,358	247,334	3,821,740	9,221,734	5,152,660	472,644	3,338,929	11,886	111,490	193,429	9,034,918	5,474	214,898
1960–61	193	2,211,139	34,436	3,147	2,707,271	246,565	3,848,736	9,096,107	5,000,806	440,257	3,255,482	11,736	112,818	181,558	8,651,930	5,353	244,100
1961–62	190	1,820,740	35,458	3,080	2,668,013	246,601	3,931,015	9,473,307	5,295,691	472,126	3,360,589	14,184	149,036	186,333	9,143,789	6,456	216,153

(a) Excluding particulars of felling and hauling. (b) Book values at end of year. (c) Excludes motors driven by electricity of own generation. (d) Includes water and lubricants. (e) Includes logs used by plywood mills and small quantities used by factories classified to other industries. (f) Includes railway sleepers and plywood veneers in terms of super. feet and small quantities of timber produced in factories classified to other industries.

CABINET AND FURNITURE MAKING AND UPHOLSTERY

Year	Number of Factories	Land, Buildings, Plant and Machinery (a)	Engines and Electric Motors Used (b)	Persons Employed	Salaries and Wages	Power, Fuel and Light Used (c)	Repairs, Containers and Materials Used	Value of Output	Net Production	Wooden Furniture Produced (d)
		£	rated h.p.		£	£	£	£	£	£
1952–53	144	574,069	3,452	1,178	596,906	16,628	940,782	1,926,845	969,435	1,820,139
1953–54	153	620,530	3,505	1,179	646,524	18,391	1,103,039	2,189,951	1,068,521	2,099,694
1954–55	151	719,870	3,493	1,170	669,971	18,421	1,163,014	2,284,237	1,102,802	2,169,285
1955–56	152	709,636	3,410	1,102	678,408	17,821	1,157,127	2,259,408	1,084,460	1,948,373
1956–57	151	753,785	3,310	1,025	623,885	18,434	1,103,247	2,131,733	1,010,052	1,977,297
1957–58	150	739,860	3,363	1,009	653,987	17,966	1,209,058	2,296,826	1,069,802	2,305,119
1958–59	150	768,440	3,628	1,010	675,509	18,096	1,288,446	2,386,762	1,080,220	2,313,715
1959–60	153	831,275	3,588	1,069	742,707	19,272	1,550,220	2,829,456	1,259,964	2,682,711
1960–61	153	882,939	3,606	1,072	787,195	19,683	1,552,473	2,906,834	1,334,678	2,854,826
1961–62	152	914,339	3,547	1,007	747,457	19,223	1,568,494	2,917,141	1,329,424	3,051,696

(a) Book values at end of year. (b) Excludes motors driven by electricity of own generation. (c) Includes water and lubricants. (d) Includes quantities produced in factories classified to other industries. Excludes furniture of wicker, etc., and of metal or partly of metal.

ELECTRICITY AND TOWN GAS UNDERTAKINGS

Electricity Generation and Transmission

Prior to the establishment of the State Electricity Commission in 1946, electricity was generated and distributed by a large number of independent power stations. A government-owned steam power station at East Perth supplied the metropolitan area, and small units of the same type, but privately-owned, operated in the major mining centres of Collie and Kalgoorlie. With other minor exceptions the country areas were dependent on internal combustion equipment, owned privately or by local government authorities and supplying either alternating or direct current at various voltages. Since 1946 a number of power stations have been absorbed into the Commission's network and, although there are still over 80 independent operators, the Commission now supplies most of the electricity used in the south-western portion of the State and all electricity sold in the metropolitan area. The Commission functions under the State Electricity Commission Act, 1945–1959 and consists of nine members, including the Chairman, appointed by the Governor. Four of the Commissioners are representatives of consumers, one for the metropolitan area, two for the rest of the State and one representing commercial consumers. Of the remaining five, one is the Under Treasurer of the State or his deputy, one represents employees of the Commission and three are required to be qualified engineers.

In 1937–38 steam power stations accounted for 54 per cent. of installed generator capacity but by 1961–62 this proportion had risen to 82 per cent., operated mainly by the Commission. Coal is by far the most important source of energy for electricity generation, but consumption of fuel oils is also significant.

In the metropolitan area the Commission has modernized the 55,000 kilowatt plant at the East Perth power station and, in 1954, completed a new station at South Fremantle, with a capacity of 100,000 kilowatts. These are linked with a power station at Bunbury, consisting of four units, each of 30,000 kilowatt capacity, the last of which was brought into operation in July, 1961.

One of the responsibilities undertaken by the State Electricity Commission was the administration of the South-West State Power Scheme Act, 1945, designed to develop electrification in the south-western portion of the State. As a first stage in this development, it acquired the Collie power station and increased its capacity from 5,000 to 12,500 kilowatts. In 1956 it installed at Wellington Dam, near Collie, a hydro-turbine which is connected to the Collie power station and operated from it by remote control. Completion of the raising of the wall of the Dam in 1960 has made it possible to operate the unit at the head of water for which it was designed. Work is in progress on the construction of a major power station at Muja, on the Collie coalfields, and contracts have been let for the installation of two 60,000 kilowatt capacity turbo-alternators.

The diesel station operated by the Commission at Albany was closed down in 1962 and Albany is now supplied by a 66,000 volt transmission line from the Commission's main system.

The generating stations situated at East Perth, South Fremantle, Bunbury and Collie are interconnected. The main links are two 132,000 volt transmission lines from Cannington switchyard in the metropolitan area to the Bunbury power station switchyard. Transmission lines, of 66,000 volts, from Bunbury to Collie and from Cannington switchyard to the East Perth and South Fremantle generating stations complete the interconnexion.

From Cannington a 66,000 volt transmission line extends eastwards to Merredin and from Bunbury 66,000 volt lines extend to Capel, Collie, Bridgetown, Wagin, Narrogin, Katanning and Albany. Further extensions, of 22,000 volts, supply Busselton, Margaret River, Pemberton, Boyup Brook and Gnowangerup.

Minor systems which are privately-owned or controlled by local government authorities are being absorbed as the grid system's transmission lines extend into the country areas and when this work is completed all except the more sparsely-populated areas of the State will be provided with electric power of standard frequency and voltage.

All generating stations outside the area supplied by the Commission are now powered by internal combustion engines. The Kalgoorlie company, which owned the only steam station not under the control of the Commission, closed it down in 1963 and the load was taken up by diesel plants.

Town Gas Production

Town gas production in Western Australia is now limited to three establishments. Two works, situated at Perth and Albany, are operated by the State Electricity Commission and the third, at Fremantle, is operated privately.

ELECTRICITY GENERATING (a)

Year	Generating Stations	Land, Buildings, Plant and Machinery (b)	Engines Used to Drive Generators	Persons Employed	Salaries and Wages	Power, Fuel and Light Used (c)	Repairs and Materials Used	Value of Output	Net Production	Fuels Used				Electricity (d)		
										Coal		Fuel Oil		Generated	Distributed	
		£	rated h.p.		£	£	£	£	£	tons	£	gal.	£	'000 kwh.	'000 kwh.	£
1952–53	95	10,199,394	253,189	1,003	916,588	2,650,595	259,119	5,109,589	2,199,875	314,425	1,461,106	8,086,481	810,162	568,677	469,209	5,994,265
1953–54	93	11,641,758	278,017	961	849,712	3,079,371	275,339	5,663,331	2,308,621	411,111	2,044,214	8,927,644	830,657	626,851	520,301	6,761,024
1954–55	94	12,699,433	323,119	945	923,264	3,352,850	306,437	6,262,257	2,602,970	431,251	2,275,402	11,672,741	932,033	702,272	582,688	7,523,244
1955–56	90	12,307,345	359,751	949	1,000,090	3,302,395	368,085	6,334,363	2,663,883	470,060	2,308,900	9,688,107	852,188	752,591	626,928	8,071,083
1956–57	87	17,484,715	406,482	971	1,052,490	3,438,602	291,544	6,645,692	2,915,546	464,243	2,258,452	11,044,893	1,009,166	781,620	652,438	8,545,583
1957–58	87	19,459,069	410,906	1,070	1,120,361	3,432,205	287,315	7,037,689	3,318,169	501,171	2,217,811	10,413,223	1,036,319	828,765	688,990	9,090,885
1958–59	88	20,236,373	452,673	1,106	1,181,173	3,529,516	333,730	7,356,461	3,493,215	526,575	2,255,492	11,399,167	1,102,079	876,169	731,546	9,629,380
1959–60	91	20,730,473	500,680	1,080	1,228,773	3,610,478	327,606	7,854,357	3,916,273	551,858	2,304,626	12,118,145	1,114,787	938,078	785,147	10,323,982
1960–61	89	20,786,569	544,592	1,065	1,298,631	3,770,018	429,470	8,469,760	4,270,272	445,068	1,851,292	30,423,810	1,724,603	1,035,455	870,075	11,311,617
1961–62	89	20,011,777	547,972	1,052	1,315,759	3,622,466	401,733	8,491,158	4,466,959	572,701	2,130,336	20,727,106	1,289,465	1,110,407	929,841	11,510,867

(a) Excluding particulars of transmission and distribution. See also *Explanatory Notes and Definitions* on page 298. (b) Book values at end of year. (c) Includes water and lubricants. (d) Includes quantities produced in factories classified to other industries.

GAS WORKS (a)

Year	Gas Works	Land, Buildings, Plant and Machinery (b)	Engines and Electric Motors Used (c)	Persons Employed	Salaries and Wages	Power, Fuel and Light Used (d)	Repairs, Containers and Materials Used	Value of Output	Net Production	Materials Used				Gas Distributed		Coke (including Coke Breeze) Produced (e)	
										Coal (Carbonized)		Oil					
		£	rated h.p.		£	£	£	£	£	tons	£	gal.	£	'000 cub. ft.	£	tons	£
1952–53	4	1,356,615	1,237	212	156,597	60,860	712,022	960,940	188,058	63,750	482,898	2,036,482	186,892	1,223,879	1,122,178	23,930	110,499
1953–54	4	1,607,377	1,202	201	180,647	98,986	678,560	1,003,168	225,622	56,240	454,242	2,114,791	173,144	1,240,085	1,176,282	21,111	129,528
1954–55	4	1,692,989	1,245	200	187,667	104,906	633,383	996,751	258,462	55,167	442,972	1,925,045	149,068	1,260,631	1,201,388	22,068	131,185
1955–56	4	1,723,770	1,212	191	172,652	104,780	639,993	1,024,716	279,943	55,956	465,482	1,701,038	125,838	1,269,699	1,223,054	25,778	149,354
1956–57	4	1,784,827	1,185	175	158,379	174,929	566,389	1,015,099	273,781	41,789	410,592	1,469,998	120,949	1,245,789	1,218,862	26,769	163,353
1957–58	3	1,762,806	1,204	184	167,471	103,721	617,847	1,062,076	340,508	54,388	456,090	1,532,775	132,142	1,222,981	1,199,897	21,973	168,558
1958–59	3	1,825,792	1,204	182	179,625	136,022	602,483	1,074,966	336,461	52,206	425,439	1,618,740	137,826	1,237,531	1,217,111	19,631	183,470
1959–60	3	1,786,334	1,356	176	190,372	133,422	580,675	1,073,543	359,446	52,436	396,674	1,697,103	143,849	1,238,906	1,222,835	19,603	187,223
1960–61	3	1,710,991	1,356	177	191,835	132,502	584,807	1,066,412	349,103	47,635	386,524	1,478,931	117,705	1,246,847	1,226,783	22,228	212,909
1961–62	3	1,693,307	1,356	169	188,198	132,137	503,003	1,015,866	380,726	50,844	395,010	1,575,304	68,398	1,217,163	1,207,455	20,885	202,275

(a) Excluding particulars of distribution. See also *Explanatory Notes and Definitions* on page 298. (b) Book values at end of year. (c) Excludes motors driven by electricity of own generation. (d) Includes water and lubricants. (e) Includes quantities used in own works.

DEPARTMENT OF INDUSTRIAL DEVELOPMENT

At the end of the first World War the State Government, with the object of fostering secondary industry, established a Council of Industrial Development which has since been succeeded by the Department of Industrial Development.

The functions of this Department are to assist the expansion of existing industry, foster the establishment of new industries, encourage exports, organize exhibitions and publicize Western Australian trade and industry. It also conducts investigations and research into the commercial possibilities of using indigenous raw materials for industrial purposes. In carrying out these functions the Department establishes and maintains liaison with industry and with Government Departments responsible for the provision of necessary services, information and finance.

CHAPTER IX – TRADE, TRANSPORT AND COMMUNICATION

PART 1 – TRADE

TRADE FROM 1829 TO FEDERATION IN 1901

Statistics concerning the external trade of the Colony of Western Australia during the early years of settlement were obtained from the reports of Harbour Masters and are recorded in the colonial Blue Books. Records of trade activity in the early period are not detailed and although they show that in 1829, the year of establishment of the Colony, the total value of imports was about £50,000, they give no particulars of the type of goods nor of their precise origin. From 1846 more comprehensive details are available and in that year imports consisting principally of apparel and haberdashery, flour. biscuits, grain, tea, coffee and sugar amounted in value to £25,959.

Western Australia depended at first upon the United Kingdom for most of its imports. The first specific record of trade with the other Australian Colonies relates to the year 1857 when the value of goods received from South Australia, New South Wales and Victoria was £9,473, compared with £67,135 from the United Kingdom and a total of £94,532 from all sources. Purchases from the other Australian Colonies gradually increased in importance and in 1877 exceeded in value those from Britain and comprised nearly half the total.

In the decade before Federation, the other Australian Colonies provided 54 per cent. of Western Australia's purchases and the United Kingdom 36 per cent. The total value of imports was still well below £1 million in 1890 but in the next ten years, principally as a result of the population increase and the expansion of public works following the rich gold discoveries of 1892 and later, imports increased greatly both in range and in quantity. The importation of mining machinery, railway stores and rolling stock, iron and steel products, added to a larger volume of commodities necessary to meet growing consumer requirements, caused a rise in the value of imports to £5·96 million in 1900. Of this amount £2·68 million was spent on goods from the other Australian Colonies and £2·23 million on imports from the United Kingdom.

Almost from the inception of the Colony until the gold finds of the 1890's wool was Western Australia's most valuable export, although the Blue Books show that in some of the early years whale oil and whale bone were more important. The first known record of consignment of any commodity is for the year 1834, when 7,585 lb. of wool valued at £758 was sent to England. In 1892 almost 9 million lb. worth £326,703 was shipped from the Colony, representing nearly two-fifths of a total value of exports of £882,148. Other items, in order of importance, were gold, £226,282 ; pearl-shell and pearls, £119,259 ; timber, £78,419 ; sandalwood, £42,870 ; and hides and skins, £36,897. In the following year, the value of gold exported almost doubled and was nearly twice as great as the return from wool. Shipments of gold continued to increase and in 1900 exports of coin and bullion worth £5·55 million accounted for more than four-fifths of a total export income of £6·85 million, while timber with an export value of £0·46 million had displaced wool as the commodity second in importance to gold.

In all but a few of the seventy years before Federation, Western Australia's principal market was the United Kingdom which in the ten years from 1891 to 1900 took 49 per cent. of all exports, compared with 41 per cent. consigned to the other Australian Colonies and 10 per cent. to all other destinations.

TRADE FROM 1901 to 1951-52

After Federation, external trade continued to develop steadily with some contraction during the first World War, the economic depression of the 1930's and again during the second World War.

The value of imports rose from £6·45 million at the beginning of the century to £30·6 million in 1946–47 and then increased rapidly to £122·3 million in 1951–52. Detailed statistics of imports in this half-century are indicative of the growth of the State and the changing direction of its development. In the early part of the period, notable imports were materials for ore treatment and gold extraction, mining machinery and railway stores but in the 1920's such items as agricultural implements and machinery, tractors and processing plant became more significant. After the second World War, another change in the pattern of import trade had become apparent, with metals and metal manufactures, machines and

machinery, motor vehicles and parts, petroleum products, electrical appliances and equipment assuming increasing importance and accounting for almost one-half of the value of all imports in 1951–52.

During the period from 1901 to 1951–52 the value of exports rose from £8·52 million to £97·7 million, staple commodities being gold, wheat and flour, wool and timber. Export income from gold fluctuated widely. In the ten years before Federation it had been by far the most valuable item of export. In 1903, the peak year of production, gold shipments earned £8·62 million compared with £0·64 million from timber and £0·44 million from wool. Despite a consistent decline in output since that year and the development of wheat growing as a major industry, gold continued to be the principal item until 1919–20, when revenue from its export, £3·40 million, was exceeded for the first time by that from wheat and flour, £5·07 million, wool being next in order with export earnings of £3·94 million.

Between 1921 and 1930 the area sown to wheat trebled and wheat and flour comprised the principal source of export income throughout this decade except for two years, 1922–23 and 1923–24, when wool exports were more important. In 1927–28 the value of gold shipped, £0·66 million, was the lowest recorded for 35 years. In the same year wheat and flour earned £8·00 million and wool £4·96 million of a total export income of £18·2 million.

Prices of wheat and wool fell sharply in the early years of the next decade, and were at their lowest level in 1930–31 with an average f.o.b. value for wheat of 2s. 3½d. per bushel and for wool of 8·94 pence per lb. Despite substantial increases in shipments in that year, earnings from the export of these commodities declined. The depreciation of Australian currency in terms of sterling during 1930 and 1931 led to increased activity in the gold-mining industry. With greater production and enhanced prices gold again became a major source of income and for ten years from 1933–34 was once more the principal item of export.

After the second World War, export income from wool and from wheat and flour showed substantial increases. In the five years to the 30th June, 1952 export earnings from wool, greasy and scoured, were £153·7 million, and from wheat and flour £124·2 million, these items together accounting for almost three-quarters of the total export revenue.

CLASSIFICATION AND VALUATION OF IMPORTS AND EXPORTS

Particulars of Western Australian trade are classified in accordance with a Statistical Classification of Imports and Exports based on the tariff schedule used for Customs purposes. The classification comprises some 3,000 items of imports and about 1,200 items of exports, the items being grouped into a number of classes and sub-classes, which are shown in the table on page 330. The detailed classification and an accompanying index appear in Part IV of the *Statistical Register of Western Australia.*

Prior to an amendment to the Customs Act 1901–1936, effective from the 15th November, 1947, imports direct from oversea were recorded in " British currency values." These British currency values were the values used for Customs duty purposes, namely the f.o.b. value in sterling at the port of shipment plus an addition of 10 per cent. The 1947 amendment, in prescribing a new procedure for valuation, provided that the basis should be Australian currency f.o.b. at the port of shipment without the 10 per cent addition. Statistics of the value of oversea imports have been recorded on this basis since its introduction and those for earlier years were revised accordingly back to 1938–39.

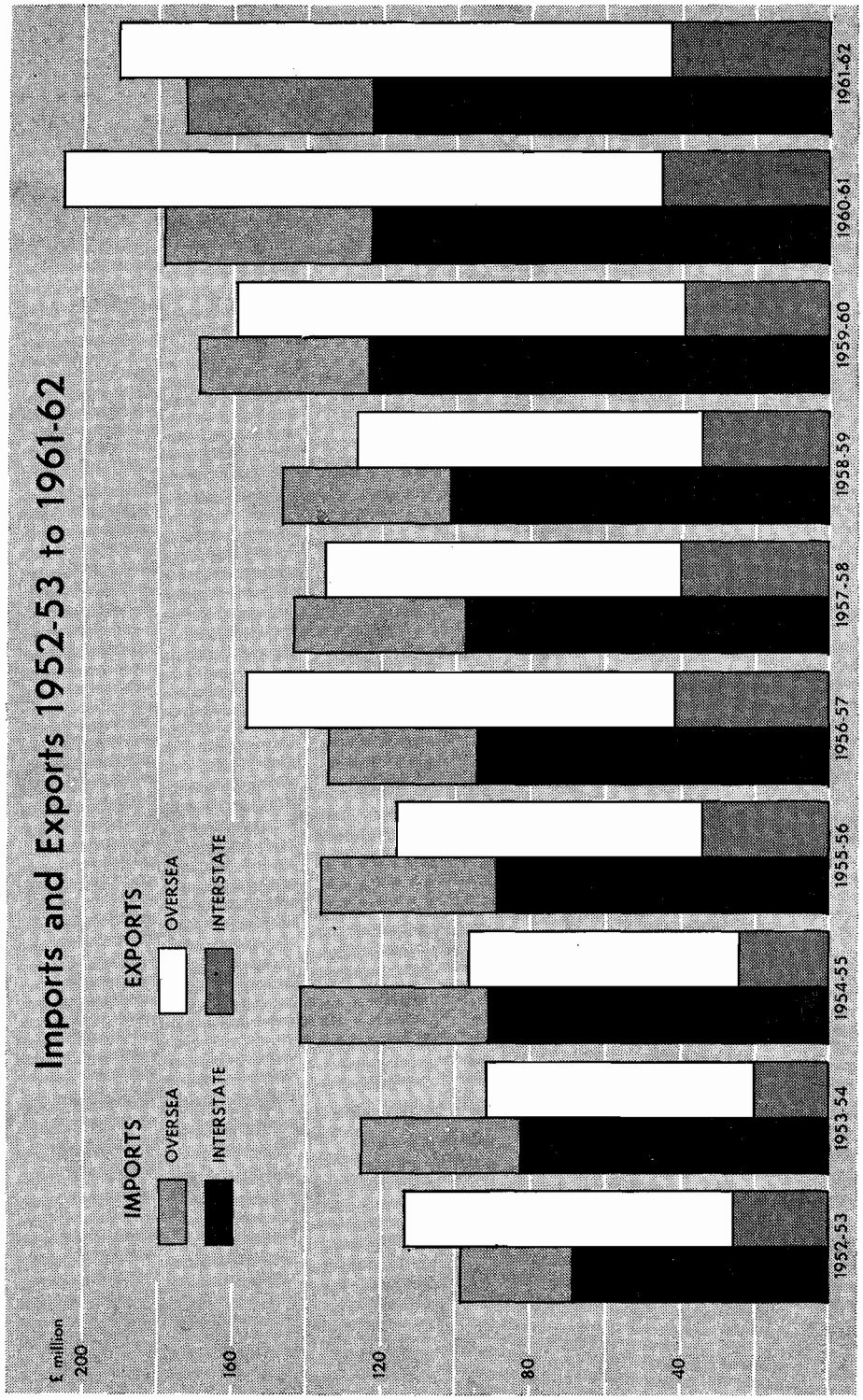
Statistics of imports from other Australian States are recorded in terms of landed cost.

The value of goods exported, both oversea and interstate, is recorded in Australian currency. The basis of valuation is f.o.b., or its equivalent, at the port of shipment or other point of consignment.

GENERAL SUMMARY OF TRADE, 1952-53 TO 1961-62

Statistics during the ten-year period ended 30th June, 1962 reveal an irregular pattern of fluctuating trading balances, as shown in the next table. In each of the years under review oversea trade resulted in a favourable balance ranging between £21·4 million (in 1954–55) and £104·3 million (in 1960–61). Interstate trade showed a deficit in each year, the largest being £84·4 million in 1959–60, and the smallest, £43·3 million in 1952–53.

Following the extension and intensification of import restrictions by the Commonwealth Government in March, 1952, the value of oversea imports fell by more than half, from £60·2 million in 1951–52 to £29·9 million in 1952–53. Although interstate imports rose in value from £62·1 million to £68·6 million there was an increase in the value of all exports to £113·1 million and total trade for the year showed a surplus of £14·7 million. There were some relaxations of import restrictions in 1953 and the first half of 1954 and oversea imports rose from £29·9 million in 1952–53 to £42·5 million in 1953–54,


Imports and Exports 1952-53 to 1961-62
£ million
200
160
120
80
40
IMPORTS
OVERSEA
INTERSTATE
EXPORTS
OVERSEA
INTERSTATE
1952-53
1953-54
1954-55
1955-56
1956-57
1957-58
1958-59
1959-60
1960-61
1961-62

while imports from other Australian States also increased, from £68·6 million to £82·7 million, giving a total increase of £26·7 million in the value of imports. Export revenue declined by £21·5 million and the total trade deficit was £33·6 million.

The rising import trend continued into 1954–55 and, while revenue from exports had begun to increase, total trade for the year showed an adverse balance of £45·6 million, some £12 million greater than that of the previous year. Although a deficit was recorded again in 1955–56, there was a considerable improvement. Expenditure on imports was £6·24 million lower than in 1954–55 and export income increased by £19·6 million, mainly as a result of larger shipments of refined petroleum to the other Australian States (see letterpress *Petroleum Products* on page 335). The value of imports showed little change in 1956–57, but export income rose by more than £40 million, resulting in a surplus of £21·5 million, the first since 1952–53. In 1957–58 imports increased by nearly £9 million to £143·4 million. Earnings from exports of wheat, gold and wool showed substantial decreases and the total decline in export income amounted to more than £21 million. The excess of imports over exports for the year was £8·47 million. In 1958–59 imports from overseas declined by almost £1 million but interstate imports continued to increase, rising by £3·66 million to £101·2 million. The value of imports from all sources was £146·2 million. Export income fell by £8·48 million due largely to smaller returns from wool, wheat, petroleum products and oats. The year's trading showed an unfavourable balance of £19·7 million, a deficiency greater by £11·2 million than that for the previous year. Although imports in 1959–60 rose by £23·3 million to £169·5 million, exports increased by £32·5 million to £159·0 million giving a net trade deficit of £10·5 million. The improvement in exports was attributable principally to increases in earnings from wool of £9·71 million, from wheat of £8·16 million and from gold of £7·31 million. While imports continued to rise in 1960–61, the year's trade resulted in a surplus, the first since 1956–57, amounting to £26·8 million. The quantity of gold bullion exported, 2,532,438 fine ounces, and the value, £39·6 million, were the greatest ever recorded and, although the value of wool shipped showed some decline, there was a substantial increase in the value of wheat and flour exported. Trade in 1961–62 again showed a favourable balance (£18·1 million) brought about mainly by reduced imports and record shipments of wheat and greasy wool.

SUMMARY OF IMPORTS AND EXPORTS
(£'000)

Item	Year ended 30th June:—									
	1953	1954	1955	1956	1957 (a)	1958 (a)	1959	1960	1961	1962
OVERSEA										
Imports	29,875	42,525	50,648	46,482	40,211	45,888	44,986	46,181	55,265	50,089
Exports	87,852	71,649	72,039	81,036	114,832	94,689	91,801	120,068	159,538	148,499
Excess of :—										
Imports over Exports										
Exports over Imports	57,977	29,124	21,391	34,554	74,621	48,801	46,815	73,887	104,273	98,410
INTERSTATE										
Imports	68,606	82,687	91,055	88,976	94,340	97,551	101,215	123,348	122,737	122,604
Exports	25,281	20,004	24,055	34,636	41,195	40,283	34,692	38,930	45,231	42,313
Excess of :—										
Imports over Exports	43,325	62,683	67,000	54,340	53,145	57,268	66,523	84,418	77,506	80,291
Exports over Imports										
TOTAL										
Imports	98,481	125,212	141,703	135,458	134,551	143,439	146,201	169,529	178,002	172,693
Exports	113,133	91,653	96,094	115,672	156,027	134,972	126,493	158,998	204,769	190,812
Excess of :—										
Imports over Exports		33,559	45,609	19,786		8,467	19,708	10,531		
Exports over Imports	14,652				21,476				26,767	18,119

(a) Figures for 1956–57 incorporate an adjustment to include, and those for 1957–58 to exclude, an amount of £504,450, representing the value of a consignment of goods exported overseas in 1956–57 but not recorded until 1957–58.

IMPORTS

In each year of the period from 1952–53 to 1961–62, about two-thirds of Western Australia's expenditure on imports was on goods purchased in the other Australian States. In 1959–60 the proportion was as high as 72·8 per cent. and the average for the period was 68·7 per cent. The following table, which relates to the years 1960–61 and 1961–62, provides a summary of the principal items imported from this source, and also gives a dissection of imports according to main supplying States in 1961–62.

VALUE OF PRINCIPAL IMPORTS FROM AUSTRALIAN STATES (a)

Commodity	Year ended 30th June, 1961	Year ended 30th June, 1962				
	All States	New South Wales	Victoria	South Australia	Queensland, Tasmania, Northern Territory	All States
	£	£	£	£	£	£
Apparel (other than headwear and footwear)	9,911,683	3,246,401	6,292,556	112,546	155,364	9,806,867
Bananas	367,533	369,938	4,358	27,533		401,829
Batteries	699,318	520,330	152,705	1,364	3	674,402
Blankets and Rugs	237,808	20,028	89,514	41,203	19,678	170,423
Breakfast Foods	257,278	273,350	33,413	3,279	28	310,070
Brushware	211,531	76,262	81,908	98,988	207	257,365
Builders and Engineers' Hardware	2,149,985	640,217	1,164,918	120,603	146,516	2,072,254
Butter	97,105	304	265,865			266,169
Cable, Electrical (Covered)	764,063	424,040	360,243	29,725	146	814,154
Carpets and Carpeting	714,886	222,827	434,901	8,402	3,449	669,579
Cheese	462,045	397	493,436	16,018	18,725	528,576
Cigarettes	2,998,014	527,485	2,508,411	262		3,036,158
Coal	482,780	330,460				330,460
Confectionery	1,463,461	589,496	570,217	43,006	375,535	1,578,254
Explosives	1,089,068	10,364	1,091,300			1,101,664
Footwear	2,839,227	819,865	1,788,033	98,336	7,391	2,713,625
Fruits preserved in liquid	638,404	17,874	260,880	103,891	273,551	656,196
Hand Tools (Non-powered)	534,298	197,979	276,256	13,789	13,138	501,162
Headwear	270,348	145,188	114,656	5,309	824	265,977
Iron and Steel	12,318,056	11,627,919	140,174	193,802	6,602	11,968,497
Jam	350,011	20,350	288,222	47,776	39,567	395,915
Machines and Machinery—						
Agricultural	3,310,139	199,732	2,637,733	752,351	7,464	3,597,280
Refrigerators (Household)	1,312,220	550,783	423,610	325,291	50	1,299,734
Tractors and Parts	1,452,941	267,342	1,333,784	78,733	46,522	1,726,381
Washing Machines and Parts	544,634	67,897	62,578	545,333		675,808
Other	6,595,945	3,527,014	2,785,553	865,378	246,359	7,424,304
Magazines, Periodicals and Books	516,545	208,123	168,913	10,572	5,749	393,357
Margarine	575,661	418,391	15,874	11,919	63,870	510,054
Medicinal Preparations	2,074,270	1,969,409	650,603	256,896	5,801	2,882,709
Metals, Non-ferrous	1,255,181	868,007	264,306	39,114	86,648	1,258,075
Milk and Cream, Preserved	875,017	36,969	1,071,732	94		1,108,795
Motor Vehicles and Components (excluding Motor Cycles)	16,563,490	2,238,672	9,162,031	4,138,111	97,807	15,636,621
Paints, Varnishes and Lacquers	565,697	353,816	82,936	143,792	101	580,645
Paper and Paper Boards	2,053,372	482,376	762,077	40,622	643,630	1,928,705
Petroleum Oils and Spirits	1,617,332	275,468	746,800	64,852	536	1,087,656
Pickles, Chutneys and Sauces	263,537	71,696	205,314	33,703	3,695	314,408
Piece-goods (apparel and furnishing fabrics)	1,843,628	588,385	1,140,676	151,468	55,479	1,936,008
Soap and Soap Substitutes	1,368,067	511,110	530,496	14,638	44	1,056,288
Tobacco, Manufactured	1,116,444	624,023	295,610	768		920,401
Toilet Preparations	1,276,957	1,178,764	315,030	42,031	1,428	1,537,253
Towels and Towelling	223,995	85,377	122,507	16,311	2,406	226,601
Toys	336,507	159,908	160,546	10,582	5,570	336,606
Tyres and Tubes, Rubber	3,059,379	1,239,397	1,915,728	21,829	845	3,177,799
Vegetables preserved in liquid	485,337	167,311	251,341	19,206	34,963	472,821
Wines	583,346	22,098	21,591	537,928	346	581,963
Wire and Wire Manufactures	829,774	648,005	201,514	24,901	443	874,863
Wireless (Radio and Television) Equipment	4,580,602	1,603,637	717,522	198,368	1,626	2,521,153
Wool—						
Greasy and Scoured	343,218	6,431	77,990	324,924	1,707	411,052
Tops	174,216		16,230	65,622		81,852
Wool Yarn (Knitting Wool)	328,669	39,859	170,270	1,082	25,470	236,681
All Other Commodities	27,753,884	12,635,337	10,371,332	2,487,591	3,794,131	29,288,391
TOTAL INTERSTATE IMPORTS	122,736,906	51,126,411	53,094,193	12,189,842	(b) 6,193,414	122,603,860

(a) Figures relate to the State from which the commodity was imported, which is not in all cases the State in which it was produced. (b) Comprises Queensland, £3,960,113; Tasmania, £1,977,181; Northern Territory, £256,120.

Western Australia's imports consist predominantly of manufactured goods and equipment. During the ten years ended 30th June, 1962 more than three-quarters (77·5 per cent.) of the total of £1,445 million spent on imports from all sources represented commodities in five of the statistical classes shown in the following table. Class XII—Metals, Metal Manufactures and Machinery, accounted for 39·2 per cent.; Class VIII—Yarns and Manufactured Fibres, Textiles and Apparel, for 13·5 per cent.; Class IX—Oils, Fats and Waxes, for 12·8 per cent.; Class II—Foodstuffs of Vegetable Origin, for 6·5 per cent.; and Class XIX—Chemicals, Medicinal Products, Essential Oils and Fertilizers, for 5·5 per cent.

VALUE OF IMPORTS ACCORDING TO STATISTICAL CLASS
(£'000)

Class No.	Name of Class	Year ended 30th June :—				
		1953	1954	1955	1956	1957
I	Foodstuffs of Animal Origin	2,755	3,149	3,261	3,093	3,145
II	Foodstuffs of Vegetable Origin	7,041	8,104	9,008	8,722	9,695
III	Spirituous and Alcoholic Liquors	526	767	858	947	914
IV	Tobacco, Cigarettes, Cigars and Snuff	2,343	2,864	3,026	2,677	3,139
V	Live Animals	512	726	610	560	586
VI	Animal Substances other than Foodstuffs	650	633	538	536	1,341
VII	Vegetable Substances and Fibres	638	734	711	549	722
VIII (A)	Yarns and Manufactured Fibres	1,472	1,512	2,024	1,474	1,984
VIII (B)	Textiles	3,932	6,982	6,983	6,597	6,211
VIII (C)	Apparel	7,890	10,382	10,741	10,235	11,525
IX	Oils, Fats and Waxes	8,412	8,858	15,976	18,305	19,228
X	Pigments, Paints and Varnishes	874	1,262	1,397	1,467	1,482
XI	Rocks and Minerals (including Ores and Concentrates)	1,223	1,582	1,662	1,447	1,400
XII (A)	Metals and Metal Manufactures	22,013	29,694	32,230	28,908	26,369
XII (B)	Dynamo Electrical Machinery and Appliances	3,986	5,145	5,479	5,725	5,472
XII (C)	Machines and Machinery (except Dynamo Electrical)	14,862	20,155	21,126	17,299	14,110
XIII (A)	Rubber and Rubber Manufactures	3,442	3,639	3,758	3,955	3,464
XIII (B)	Leather and Leather Manufactures	455	434	408	364	398
XIV	Wood and Wicker, Raw and Manufactured	510	924	816	840	831
XV	Earthenware, Cement, China, Glass, etc.	1,071	1,623	1,704	1,655	1,507
XVI (A)	Pulp, Paper and Board	1,373	1,659	2,588	2,329	2,407
XVI (B)	Paper Manufactures and Stationery	1,948	2,266	2,627	2,687	2,795
XVII	Sporting Materials, Toys, Fancy Goods, etc.	751	1,336	1,406	1,513	1,463
XVIII	Optical, Surgical and Scientific Instruments and Apparatus	529	844	916	973	974
XIX	Chemicals, Medicinal Products, Essential Oils and Fertilizers	4,978	5,910	6,733	6,760	7,412
XX	Miscellaneous	4,289	4,023	5,117	5,841	5,977
XXI	Gold and Silver ; Bronze Specie	6	5	(a)	(a)	
	TOTAL IMPORTS	98,481	125,212	141,703	135,458	134,551

Class No.	Name of Class	Year ended 30th June :—				
		1958	1959	1960	1961	1962
I	Foodstuffs of Animal Origin	3,829	3,990	4,125	3,768	3,609
II	Foodstuffs of Vegetable Origin	9,050	9,977	10,507	10,759	11,132
III	Spirituous and Alcoholic Liquors	831	912	1,185	1,016	1,125
IV	Tobacco, Cigarettes, Cigars and Snuff	2,796	3,551	3,797	4,209	4,078
V	Live Animals	1,020	775	753	589	565
VI	Animal Substances other than Foodstuffs	893	565	870	581	561
VII	Vegetable Substances and Fibres	632	538	659	627	596
VIII (A)	Yarns and Manufactured Fibres	1,821	1,563	1,614	2,542	1,692
VIII (B)	Textiles	6,462	6,313	7,263	6,949	6,557
VIII (C)	Apparel	11,170	11,505	14,102	13,011	12,972
IX	Oils, Fats and Waxes	21,737	20,485	21,508	26,344	24,538
X	Pigments, Paints and Varnishes	1,488	1,414	1,345	1,183	1,029
XI	Rocks and Minerals (including Ores and Concentrates)	1,453	1,237	1,229	1,400	1,150
XII (A)	Metals and Metal Manufactures	31,615	29,976	37,959	42,311	39,794
XII (B)	Dynamo Electrical Machinery and Appliances	5,215	5,579	10,533	9,900	8,098
XII (C)	Machines and Machinery (except Dynamo Electrical)	15,606	16,402	20,228	20,072	20,634
XIII (A)	Rubber and Rubber Manufactures	3,448	3,756	3,876	4,130	4,444
XIII (B)	Leather and Leather Manufactures	385	365	367	448	466
XIV	Wood and Wicker, Raw and Manufactured	874	815	897	1,204	839
XV	Earthenware, Cement, China, Glass, etc.	1,584	1,640	1,740	1,904	2,295
XVI (A)	Pulp, Paper and Board	2,546	2,739	3,088	3,310	2,990
XVI (B)	Paper Manufactures and Stationery	2,833	2,973	3,245	2,846	2,766
XVII	Sporting Materials, Toys, Fancy Goods, etc.	1,488	1,351	1,718	1,786	1,836
XVIII	Optical, Surgical and Scientific Instruments and Apparatus	1,063	1,244	1,379	1,538	1,647
XIX	Chemicals, Medicinal Products, Essential Oils and Fertilizers	8,333	9,499	9,607	9,331	10,538
XX	Miscellaneous	5,267	7,037	5,935	6,244	6,741
XXI	Gold and Silver ; Bronze Specie					1
	TOTAL IMPORTS	143,439	146,201	169,529	178,002	172,693

(a) Less than £500.

In 1961–62 the value of imports of commodities in the five main statistical classes was £136 million or 78·7 per cent. of all imports aggregating £173 million.

In Class XII, which accounted for £68·5 million, principal items were motor vehicles and components £18·1 million, iron and steel £12·4 million, tractors and parts £4·06 million, agricultural machinery £3·79 million, radio, television and communication equipment £3·32 million, builders and engineers' hardware £2·22 million, refrigerating appliances £1·95 million, earthworking and road-making machinery £1·70 million, non-ferrous metals £1·34 million, internal combustion engines £1·17 million, cooking and heating appliances £1·14 million, wire and wire manufactures £0·95 million, covered electrical cable and wire £0·86 million, office and accounting machines £0·77 million, batteries and accumulators £0·69 million, and washing machines £0·68 million.

Class VIII showed total imports of £21·2 million, the main commodities being apparel other than footwear £10·2 million, piece-goods £3·54 million, footwear £2·76 million, bags, sacks and woolpacks £1·17 million, carpets and carpeting £0·86 million, linoleums £0·33 million, towels and towelling £0·27 million, bed linen and bedspreads £0·25 million, knitting wool £0·24 million, blankets and rugs £0·19 million, sewing threads £0·11 million, and cordage, rope and twine £0·10 million.

Class IX recorded a total of £24·5 million, the predominant items being crude petroleum £18·5 million and refined petroleum oils and spirits £4·77 million. (See letterpress *Petroleum Products* on page 335.)

In Class II, imports aggregating £11·1 million were accounted for mainly by confectionery £1·60 million, dried and canned fruits (including juices and syrups) £1·12 million, tea £1·06 million, jam, pickles, chutneys and sauces £0·75 million, canned and frozen vegetables £0·72 million, coffee £0·50 million, bananas £0·40 million, prepared soups £0·38 million, breakfast foods £0·31 million, and nuts £0·25 million.

In Class XIX, with a total of £10·5 million, imports consisted largely of medicinal preparations and drugs £3·02 million, chemical fertilizers £1·76 million, toilet preparations £1·55 million, and soap and soap substitutes £1·11 million.

EXPORTS

It will be apparent from an examination of the table on page 341 that Western Australia continues to be dependent for a very large part of its export income on the products of its primary industries as, for example, wool in the grease, wheat, oats and barley, skins and hides, fresh fruit and vegetables, mineral ores, or commodities derived from them by the first stages of processing such as wool scouring, flour milling, gold refining, sawmilling, and meat and fish freezing.

During the ten years ended 30th June, 1962 the aggregate value of Western Australia's exports (including the value of ships' stores) was £1,389 million. Of this total more than two-thirds (69·5 per cent.) was accounted for by fourteen commodities or groups of commodities, namely wool, greasy and scoured (£379 million or 27·3 per cent.), wheat and wheaten flour (£275 million, 19·8 per cent.), gold bullion (£96·2 million, 6·93 per cent.), frozen and chilled meats, including offals, poultry and rabbits (£37·7 million, 2·72 per cent.), timber (£31·6 million, 2·28 per cent.), crayfish tails (£22·4 million, 1·62 per cent.), oats (£21·7 million, 1·56 per cent.), skins and hides (£19·3 million, 1·39 per cent.), fresh fruit (£18·5 million, 1·33 per cent.), barley (£13·0 million, 0·94 per cent.), fresh vegetables (£7·68 million, 0·55 per cent.), eggs (£6·34 million, 0·46 per cent.), sheep, cattle and pigs (£5·01 million, 0·36 per cent.), and the principal minerals other than gold (£32·3 million, 2·33 per cent.).

A large oil refinery began production early in 1955 and, during the first seven full years of operation, refined liquid petroleum products valued at more than £187 million were exported as commercial cargo or in the form of supplies to ships and aircraft (see letterpress *Petroleum Products* on page 335). The addition of earnings from these items to the income from those already enumerated meant that in the seven years ended 30th June, 1962 the total value of exports of fifteen commodities or groups of commodities was £922 million or 84·8 per cent. of that of all exports.

In the following tables and accompanying letterpress these commodities are dealt with separately for each year of the period from 1952–53 to 1961–62. The figures shown in the tables exclude details of exports in the form of ships' stores, to which some reference is made on page 340.

Wool, Skins and Hides

Wool

Wool is exported predominantly in greasy form but scoured wool is nevertheless an important item of external trade, its total export value during the ten-year period under review being more than one-fifth of that of wool in the grease.

It will be seen from the following table that export income from greasy wool fluctuated widely during the period because of large variations both in the quantity shipped and in price.

The lowest average price, 50·01 pence per lb., was recorded in 1958–59, when 111 million lb. returned £23·2 million, and the highest, 85·02 pence per lb., in 1953–54. In 1961–62, when the record quantity of 137 million lb. was exported, earnings amounted to £34·1 million.

EXPORTS OF GREASY WOOL

Item	Year ended 30th June :—									
	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
Quantity '000 lb.	100,909	100,701	96,554	113,289	108,582	96,453	111,131	111,104	131,903	136,894
Value £'000	33,879	35,673	29,648	28,947	35,626	28,612	23,156	29,068	29,645	34,088
Average value (*a*) pence	80·58	85·02	73·70	61·32	78·74	71·20	50·01	62·79	53·94	59·76

(*a*) F.o.b. value per lb.

The principal market during the ten-year period was the United Kingdom which received shipments totalling 428 million lb. worth £120 million, equivalent to 39·0 per cent. of the value of all greasy wool exported. The purchasing country next in importance was France, which took 144 million lb. valued at £38·4 million, followed by Japan which bought 120 million lb. worth £32·6 million. Other valuable markets were Italy, the United States of America, the Federal Republic of Germany, Belgium-Luxembourg and Poland. A significant feature of exports during the period was the decline in each year except 1956–57 of the value of purchases by the United Kingdom and the gradual increase in sales to Japan. In 1961–62 Japan, which purchased 30·1 million lb. worth £7·86 million, became the most important market, while the United Kingdom bought 28·7 million lb. valued at £6·85 million.

EXPORTS OF SCOURED WOOL

Item	Year ended 30th June :—									
	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
Quantity '000 lb.	12,604	11,918	13,261	16,745	18,746	18,557	21,763	27,430	26,128	25,331
Value £'000	5,682	5,457	5,633	6,210	8,129	7,731	6,112	9,910	7,776	7,844

The United Kingdom was the most important market for scoured wool, purchasing 45·8 million lb. worth £16·0 million, or 22·7 per cent. of the total. In the last five years of the period, when the value of exports totalled £39·4 million, the Republic of China (Mainland) became the principal customer, with purchases amounting to £9·48 million (24·1 per cent.), followed by the United States of America and the United Kingdom. In 1961–62 the Republic of China (Mainland) purchased 5·39 million lb. worth £2·02 million, the United States of America being next in importance with purchases valued at £1·61 million.

Skins and Hides

EXPORTS OF SKINS AND HIDES

Type	Year ended 30th June :—									
	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
QUANTITY ('000 lb.)										
Sheep and Lamb	10,845	8,293	7,610	9,169	10,863	9,676	12,040	12,795	11,986	12,541
Cattle and Calf	1,202	1,496	2,181	2,850	(*a*) 3,057	(*a*) 3,024	4,639	4,457	4,080	4,704
VALUE (£'000)										
Sheep and Lamb	1,801	1,465	1,242	1,351	2,038	1,708	1,318	1,847	1,508	1,774
Cattle and Calf	124	115	136	183	(*a*) 230	(*a*) 210	409	507	385	475
Other	46	67	82	103	68	20	17	29	21	41
Total	1,971	1,647	1,460	1,637	(*a*) 2,336	(*a*) 1,938	1,744	2,383	1,914	2,290

(*a*) Figures for 1956–57 incorporate an adjustment to include, and those for 1957–58 to exclude, an amount of £11,006, representing the value of a consignment of 204,367 lb. cattle hides exported overseas in 1956–57 but not recorded until 1957–58.

Skins exported from Western Australia consist largely of sheep and lamb skins, mainly with wool. France was by far the most important customer in each of the years under review, taking consignments valued at £9·91 million, equivalent to 61·7 per cent. of the total for the ten-year period. The next most valuable market was the United Kingdom, followed by Italy and Belgium-Luxembourg. Significant purchases were made by the Netherlands, Yugoslavia and the Federal Republic of Germany.

Other export items are calf skins and certain furred skins, notably kangaroo and rabbit, for which the other Australian States provided a regular market throughout the period. The United States of America was an important buyer until 1956–57.

The export trade in hides, which consist principally of cattle hides, was mainly with the other Australian States, their purchases amounting to nearly three-quarters of the total value of exports during the ten-year period. Among oversea customers the United Kingdom, Turkey, Japan and India were predominant.

Wheat and Wheaten Flour, Oats and Barley

Wheat and Wheaten Flour

The annual export income from wheat varied considerably during the ten years under review, from £5·64 million in 1953–54, when only 6·80 million bushels were shipped, to £52·2 million in 1961–62, or more than one-third of the aggregate value of all exports to oversea countries in that year. From 1958–59, the income of each succeeding year was about half again as great as that of the previous year.

In 1952–53 the f.o.b. value of wheat reached 17s. 3½d. per bushel, the highest level since the record average value of 17s. 6d. in 1947–48. After declining progressively to a minimum for the period of 12s. 8d. in 1955–56, values showed some recovery during the remainder of the period, varying between 13s. 1¼d. and 15s. 4d.

EXPORTS OF WHEAT

Item	Year ended 30th June :—									
	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
Quantity '000 bush.	23,319	6,800	19,335	22,773	46,796	26,644	23,503	36,713	52,480	73,883
Value £'000	20,173	5,636	13,739	14,430	30,646	20,431	16,556	24,721	35,640	52,178
Average value (*a*) s. d.	17 3½	16 7	14 2½	12 8	13 1¼	15 4	14 1	13 5½	13 7	14 1½

(*a*) F.o.b. value per bushel.

Although the United Kingdom was the principal market for wheat during the ten-year period, its purchases in 1961–62, valued at £7·48 million, were exceeded by those of the Republic of China (Mainland) which were worth £15·9 million, and Japan which spent £9·02 million. Important markets throughout the period were India, Japan, the Federal Republic of Germany, the Republic of Ireland and Hong Kong. In 1961–62 Spian took consignments worth £4·77 million.

EXPORTS OF WHEATEN FLOUR

Item	Year ended 30th June :—									
	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
Quantity short tons (*a*)	176,241	147,849	120,343	129,421	127,491	111,827	104,559	87,789	135,375	97,951
Value £'000	7,545	5,852	3,610	3,883	3,737	3,454	3,169	2,548	3,919	2,944

(*a*) Short ton = 2,000 lb.

Exports of wheaten flour during the ten years went mainly to Indonesia, Singapore and Malaya. However, purchases by these countries showed a decline during the period, while Ceylon, Aden and the Arabian States became increasingly important customers, their combined purchases in 1961–62 amounting to £1·75 million, almost three-fifths of the total value of flour exported in that year.

Oats

Exports of oats showed wide fluctuations during the ten-year period to 1961–62. In the first five years the average annual income amounted to £1·14 million compared with an average of £3·19 million in the second half of the period.

EXPORTS OF OATS

Item	Year ended 30th June :—									
	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
Quantity '000 bush.	2,406	2,393	1,095	4,410	4,188	1,868	9,544	6,496	11,836	9,529
Value £'000	1,000	863	486	1,696	1,654	955	3,843	2,850	4,359	3,957

The Federal Republic of Germany was the most important market during the period, its purchases accounting for more than half the total value of exports. Other large buyers were the Netherlands and the United Kingdom and, in 1960–61 and 1961–62, the Republic of China (Mainland) which took shipments of a total value of £1·57 million in those years.

Barley

Apart from a decline in the years 1953–54 and 1957–58, annual export income over the ten-year period rose rapidly from £0·59 million to £2·41 million in 1959–60. After a slight fall in 1960–61 it increased further to £2·62 million in 1961–62.

EXPORTS OF BARLEY

Item	Year ended 30th June :—									
	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
Quantity '000 bush.	922	938	1,147	2,234	2,130	1,124	2,589	4,912	5,765	5,411
Value £'000	585	438	642	963	1,008	634	1,380	2,410	2,317	2,621

The United Kingdom purchased 14·1 million bushels worth £6·74 million, representing more than half the total value of exports during the period, and was the principal buyer in each of the first four years and again in 1961–62. Japan was the most valuable market in 1956–57, the Federal Republic of Germany in 1957–58, Denmark in 1958–59 and Italy in 1959–60 and 1960–61.

Minerals and Mineral Products

Gold

Although the production of gold was well sustained at an annual level of more than 800,000 fine ounces during the ten years from 1952–53 to 1961–62, the quantity shipped was extremely variable. Export earnings ranged from £2·06 million in 1958–59 to the record figure of £39·6 million in 1960–61. In all, 6·90 million fine ounces were exported during the period, for an aggregate value of £108·6 million.

EXPORTS OF GOLD BULLION

Item	Year ended 30th June :—									
	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
Quantity fine oz.	759,291	418,069	618,495	410,278	770,061	207,665	131,634	599,571	2,532,438	452,624
Value £'000	12,399	6,615	9,669	6,421	12,060	3,256	2,059	9,369	39,636	7,097

Exports to the United Kingdom, which in the period from 1952–53 to 1958–59 were insignificant, amounted to £9·37 million in 1959–60 and £31·0 million in 1960–61. Switzerland purchased gold valued at £0·35 million in 1960–61. All other exports during the ten-year period represented gold consigned to New South Wales for shipment overseas.

Minerals other than Gold

The principal minerals, other than gold, exported during the ten years from 1952–53 to 1961–62 were asbestos, manganese ore, iron ore and concentrates, and ilmenite concentrates. Significant returns were received from exports of ores and concentrates of lead (including silver-lead), tin and copper.

EXPORTS OF PRINCIPAL MINERALS OTHER THAN GOLD

Mineral	Year ended 30th June :—									
	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
QUANTITY ('000 tons)										
Asbestos	3	3	4	7	11	12	11	15	11	13
Ilmenite Concentrates					(*a*) 15	88	65	89	130	156
Iron Ore (*b*)	544	583	580	472	329	439	589	796	1,509	1,132
Manganese Ore	14	27	34	55	58	75	56	79	47	108
VALUE (£'000)										
Asbestos	495	493	394	720	1,070	1,460	1,083	1,556	1,182	1,377
Ilmenite Concentrates					(*a*) 85	506	324	357	599	720
Iron Ore (*b*)	539	579	575	468	325	435	584	801	1,274	1,244
Manganese Ore	128	414	402	635	776	1,251	814	1,112	634	1,473

(*a*) Oversea exports only. Interstate exports of all titanium and zirconium ores and concentrates amounted to 12,129 tons valued at £65,081. (*b*) From 1959–60, includes pyritic cinders.

The principal market for asbestos during the period under review was the United States of America, which took shipments worth more than two-fifths of the total value of asbestos exported. Consignments to the other Australian States accounted for one-fifth, and other important customers were Italy and Japan.

Exports of manganese ore during the period amounted to 0·55 million tons valued at £7·64 million. Shipments worth almost half the total value went to other Australian States. Japan, the United States of America and France were other important customers. Japan, which was the principal market in each of the last three years, purchased ore valued at £1·12 million in 1961–62.

All the iron ore exported during the period, 6·39 million tons valued at £6·43 million, went to New South Wales. In 1959–60 the first export of pyritic cinders was made to Japan, and in the three years to 1961–62 consignments amounting to 0·58 million tons worth £0·39 million were sent there.

In the six years from 1956–57, when the first shipments of ilmenite concentrates were made, purchases by the United Kingdom amounted to more than one-quarter of the total value of exports. Other important markets were Tasmania and the United States of America. In 1961–62 the United Kingdom took consignments valued at £0·38 million.

Japan was the principal market for lead ores and concentrates, its purchases accounting for almost half the total value of exports worth £2·51 million during the ten years. Belgium-Luxembourg was a prominent buyer in the early years of the period. Exports of tin ores and concentrates, mainly to other Australian States, were valued at £1·39 million. Japan was the principal buyer of copper ores and concentrates, which had a total export value of £1·34 million for the ten years, the other Australian States providing the next most important market.

Petroleum Products

Although Western Australia still relies very largely for its export revenue on the products of its primary industries, an important development in recent years has been the establishment of a major oil refinery which began production in January, 1955. The total value of exports of refined liquid

petroleum products, including quantities supplied as fuel to ships and aircraft, was £21·0 million in 1955–56, the first full year of operation, £31·5 million in 1960–61 and £28·8 million in 1961–62.

The following table shows the amount spent on imports of these products during each year from 1952–53 to 1961–62 and on crude petroleum for each of the years from 1954–55 to 1961–62. The value of products sent out of the State in the form of commercial cargo and as supplies to ships and aircraft is also given, together with the net balance of imports in relation to exports. The significance of the refining industry in the trade of Western Australia will be readily appreciated from an examination of this balance. In the five years before the industry came into production, trade in liquid petroleum products showed an average annual net deficit of £4·56 million compared with an average surplus of £5·76 million in the first seven full years of operation. In 1957–58 the net gain was as high as £8·13 million.

SUMMARY OF TRADE IN PETROLEUM AND PETROLEUM PRODUCTS
(£'000)

Year ended 30th June:	Imports			Exports (*b*)			Balance	
	Crude Petroleum	Refined Liquid Petroleum Products (*a*)	Total	Commercial Cargo	Supplies to Ships and Aircraft	Total	Excess of Imports over Exports	Excess of Exports over Imports
1953		7,971	7,971	261	4,392	4,653	3,318	
1954		8,365	8,365	131	2,938	3,069	5,296	
1955	5,466	9,978	15,444	3,032	3,202	6,234	9,210	
1956	13,198	4,520	17,718	16,700	4,270	20,970		3,252
1957	14,542	3,991	18,533	18,692	5,391	24,083		5,550
1958	17,954	3,164	21,118	24,377	4,865	29,242		8,124
1959	16,328	3,529	19,857	21,597	3,897	25,494		5,637
1960	17,055	3,815	20,870	23,733	3,563	27,296		6,426
1961	21,218	4,504	25,722	27,459	4,053	31,512		5,790
1962	18,526	4,772	23,298	25,320	3,516	28,836		5,538

(*a*) Includes petroleum spirit, kerosene, aviation turbine fuel, solar oil, diesel fuel oil, furnace oil and lubricating oil.
(*b*) Consists wholly of refined liquid petroleum products, there being no exports of crude petroleum.

Almost all of the crude petroleum was imported from Iran, Iraq, Kuwait and Qatar while most of the output of refined liquid products was sent to other Australian States and New Zealand, the remainder being shipped principally to Aden, Ceylon, the Republic of South Africa, Japan, India and Mozambique.

Other Principal Export Commodities

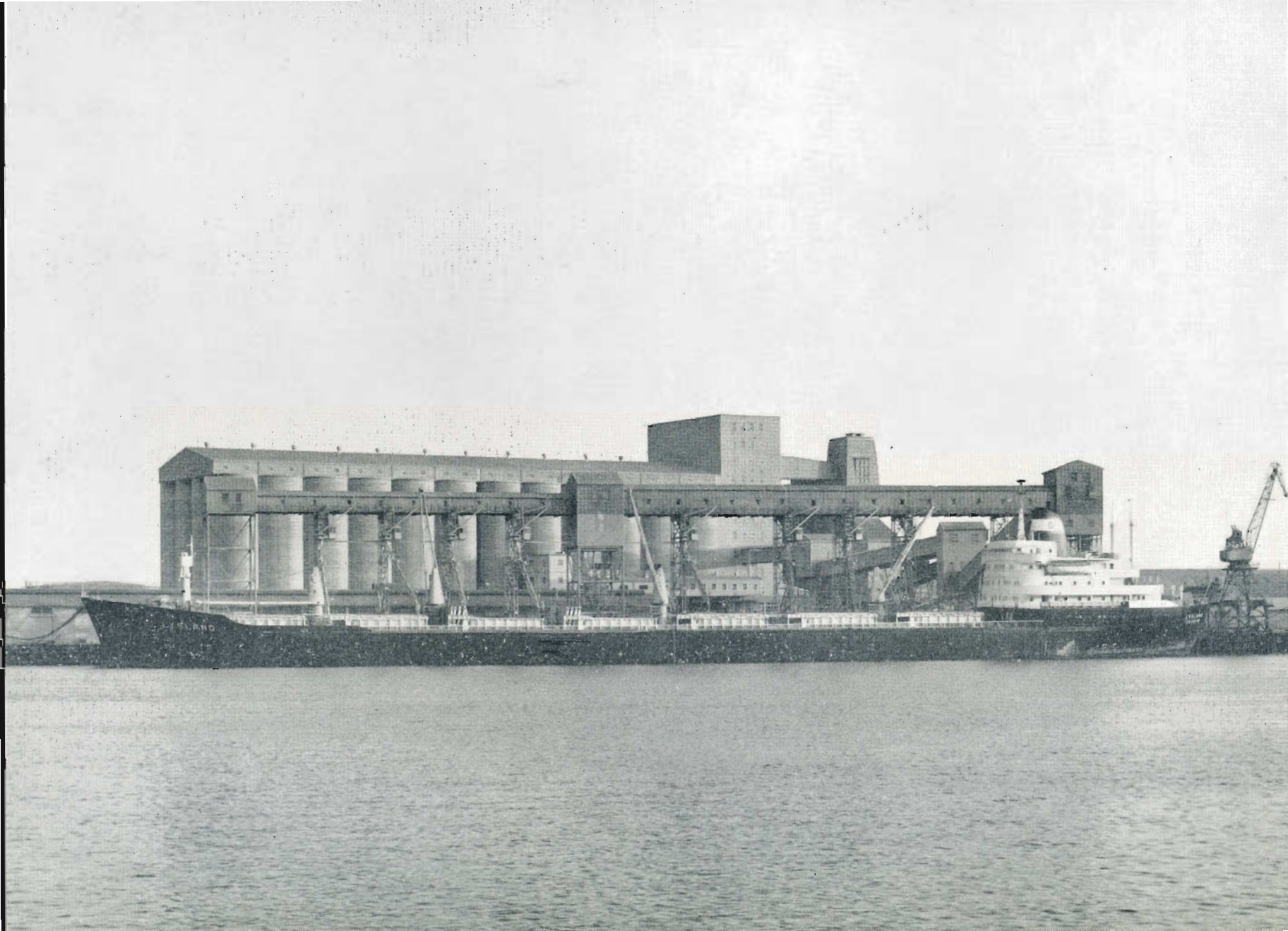
Crayfish

The export of frozen crayfish tails is a post-war development and although some small shipments had been made before 1948–49 it was not until that year that income from this source began to be significant. The quantity and value of exports increased each year until 1959–60 and, after a decrease in 1960–61, record consignments amounting to 7·95 million lb. worth £4·89 million were shipped in 1961–62.

EXPORTS OF CRAYFISH TAILS

Item	Year ended 30th June :—									
	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
Quantity '000 lb.	2,930	3,222	3,377	3,529	3,566	4,708	6,117	6,604	5,106	7,952
Value £'000	1,042	1,171	1,245	1,511	1,757	1,983	2,641	3,250	2,940	4,889

For the ten years ended 1961–62 the aggregate income from the export of crayfish tails was £22·4 million, of which £21·99 million came from purchases by the United States of America. Small consignments went to other Australian States and to Singapore throughout the period and, in some years, to Canada, Malaya and Saudi Arabia.



BULK GRAIN TERMINAL

Port of Fremantle (Inner Harbour)

The new bulk grain terminal operated at Fremantle by Co-operative Bulk Handling Limited was officially opened on the 14th September, 1964. It was constructed at a cost of £3,250,000 and has a storage capacity of 4 million bushels. The storage block is 448 feet long, 147 feet wide and 144 feet high. The grain terminal is designed to handle wheat, oats and barley simultaneously.

Eggs

Eggs are exported in shell and in pulped or powdered form, those in shell comprising about two-thirds of the total export market during the ten-year period to 1961–62. Eggs not in shell are predominantly in liquid form and there is only a small trade in powdered eggs.

EXPORTS OF EGGS

Item	Year ended 30th June :—									
	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
QUANTITY										
In Shell '000 doz.	2,470	2,322	2,922	2,213	2,085	2,331	1,894	1,490	1,271	1,156
Not in Shell '000 lb.	3,148	3,453	1,378	972	1,260	2,410	1,196	652	457	69
VALUE (£'000)										
In Shell	551	526	612	482	501	489	379	297	255	245
Not in Shell	470	565	168	116	156	267	119	68	59	11
Total	1,021	1,091	780	598	657	756	498	365	314	256

Singapore, which purchased eggs in shell to the value of £1·88 million during the ten years, was the most prominent buyer in the early years of the period, and from 1958–59 the Arabian States were the most important market.

The United Kingdom purchased almost all of the eggs shipped in liquid form.

Fruit and Vegetables

Apples are the most important of the fresh fruits exported from Western Australia, the total value of shipments during the ten years to 1961–62 representing more than four-fifths of that of all fruits exported. The United Kingdom was the principal market, with purchases amounting to more than half the value of all apples exported. Sweden and Singapore were other important customers.

Grapes, most of which were sent to Singapore, Ceylon and Malaya, predominated among the other fresh fruits exported. Exports of plums were worth £0·43 million during the period, pears £0·38 million and citrus fruits £0·28 million. Singapore was the largest buyer of both plums and citrus fruits, and was also the principal market for pears in some years, although greater quantities were bought by the United Kingdom in most years of the period.

EXPORTS OF FRESH FRUIT

Item	Year ended 30th June :—									
	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
QUANTITY										
Apples '000 bush.	1,375	846	1,068	907	1,284	871	942	626	1,284	666
Grapes (*a*) cental	23,880	22,433	23,200	21,695	(*c*)	23,606	22,111	19,600	17,321	34,317
VALUE (£'000)										
Apples	1,930	1,309	1,599	1,428	1,955	1,524	1,477	951	1,975	1,126
Grapes (*a*)	221	242	239	215	216	234	192	179	181	167
Other (*b*)	132	99	85	53	128	104	135	88	162	116
Total	2,283	1,650	1,923	1,696	2,299	1,862	1,804	1,218	2,318	1,409

(*a*) Oversea exports only ; see note (*b*). (*b*) Includes interstate exports of grapes, which are not recorded separately.
(*c*) Not available.

Potatoes constituted the principal item of exports of fresh vegetables and were sent mainly to other Australian States, whose purchases amounted to £2·67 million, representing 86·5 per cent. of the total earnings for the period. Among oversea buyers Singapore was predominant, while Saudi Arabia took significant quantities.

Tomatoes were next in importance to potatoes and were marketed largely in other Australian States, Singapore being the chief oversea customer.

The other Australian States also provided the most important market for onions, taking consignments worth more than half the total value of exports. Singapore, the principal oversea buyer, made purchases equivalent to almost two-fifths of the total.

Singapore was by far the most valuable market for other fresh vegetables, accounting for more than half the export income from these items. In 1960–61, separate particulars of exports of cauliflowers and lettuce first became available. In the two years to the 30th June, 1962 consignments valued at £0·27 million were shipped, mainly to Singapore. A notable development during the period was the increase in interstate exports of beans, valued at £0·54 million in the five years to 1961–62.

EXPORTS OF FRESH VEGETABLES

Item	Year ended 30th June :—									
	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
QUANTITY (cwt.)										
Potatoes	253,147	315,470	177,561	44,773	152,119	275,534	168,848	189,190	153,933	203,308
Tomatoes	42,743	36,155	33,005	51,529	31,965	61,137	45,749	33,004	37,150	39,170
Onions	61,869	43,633	37,143	20,677	44,231	40,122	45,885	45,404	60,663	66,211
VALUE (£'000)										
Potatoes	375	650	256	86	368	416	184	218	218	316
Tomatoes	173	158	176	287	162	133	154	170	179	148
Onions	97	63	50	44	71	59	54	112	77	109
Other	122	167	158	153	235	208	235	233	306	295
Total	767	1,038	640	570	836	816	627	733	780	868

Meats

The items of export of frozen and chilled meats in order of importance during the ten years to 1961–62 were beef and veal, lamb and mutton, and pork. With the exception of pork, almost the whole of Western Australia's trade in these commodities was with oversea countries.

EXPORTS OF FROZEN AND CHILLED MEATS

Item	Year ended 30th June :—									
	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
QUANTITY ('000 lb.)										
Beef and Veal	11,058	13,555	14,939	16,757	(a)15,876	(a)17,528	23,226	29,977	27,365	27,654
Lamb	6,150	4,078	4,567	7,487	7,174	7,943	9,623	6,565	11,506	9,229
Mutton	8,378	3,217	2,542	7,069	5,587	3,262	12,300	12,694	13,553	9,439
Pork	1,020	474	2,313	1,637	1,615	5,124	4,372	2,618	4,176	6,946
Other (b)	(c)	(c)	(c)	3,215	(a) 2,895	(c)	4,084	6,156	5,861	5,727
VALUE (£'000)										
Beef and Veal	718	874	1,019	1,172	(a)1,057	(a)1,205	2,171	3,371	3,071	3,150
Lamb	441	322	548	788	623	802	882	445	1,069	606
Mutton	291	115	116	290	248	148	707	744	882	612
Pork	152	76	266	241	294	731	589	476	750	1,013
Other (b)	470	473	323	393	(a)339	(a)306	498	639	680	553
Total	2,072	1,860	2,272	2,884	(a)2,561	(a)3,192	4,847	5,675	6,452	5,934

(a) Figures for 1956–57 incorporate an adjustment to include, and those for 1957–58 to exclude, 6,776,366 lb. of beef valued at £446,551 and 490,789 lb. of beef offal valued at £36,949 exported overseas in 1956–57 but not recorded until 1957–58.
(b) Comprises mainly offals, poultry and rabbits. (c) Not available.

The United Kingdom, whose purchases of beef aggregated £9·83 million, or more than half the total value of beef exported during the ten years, was by far the most important market in each of the first eight years of the period. The largest buyer in each of the last two years was the United States of America with purchases amounting to £3·21 million.

The principal market for lamb was the United Kingdom which took consignments worth £5·24 million compared with total exports valued at £6·52 million during the period. Other significant markets were Canada, Singapore, and the other Australian States. Mutton, of a total export value of £4·15 million, went mainly to the United Kingdom (£1·64 million), the United States of America (£0·85 million) and Singapore, Japan and Canada.

The other Australian States provided by far the most important market for pork, with purchases worth £3·49 million, or more than three-quarters of the total value of exports during the period. Singapore and the United Kingdom were the next most important customers.

For other meats, comprising mainly offals, poultry and rabbits, the principal market was the United Kingdom, whose purchases accounted for more than half the export earnings from this source. Other important customers were Singapore, and the other Australian States.

Sheep, Cattle and Pigs

Income from exports of sheep, cattle and pigs amounted in total to more than £5 million during the ten years under review. Almost one and a quarter million sheep, over thirty thousand head of cattle and nearly six thousand pigs were exported during the period, mainly to oversea countries.

EXPORTS OF SHEEP, CATTLE AND PIGS

Item	Year ended 30th June :—									
	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
	NUMBER									
Sheep	83,465	85,470	95,982	101,346	128,737	120,352	135,314	147,086	147,355	198,200
Cattle	130	204	1,259	3,593	3,020	4,168	6,148	5,502	5,811	368
Pigs	709	579	689	870	720	890	882	502	20	120
	VALUE (£'000)									
Sheep	251	284	306	312	462	421	382	423	440	627
Cattle	11	14	34	89	121	154	198	162	159	28
Pigs	14	13	11	18	18	18	18	13	1	3
Total	276	311	351	419	601	593	598	598	600	658

The total value of sheep exported was £3·91 million, of which shipments to Singapore accounted for £3·47 million. Other oversea customers were Malaya, Kuwait and Mauritius. In 1961–62, Kuwait received consignments worth £0·14 million.

Shipments of cattle valued at £0·97 million went principally to the Philippines, Singapore and Hong Kong.

Christmas Island (Indian Ocean) was the most important market for pigs.

Timber

Almost all of the timber exported from Western Australia consists of the hardwoods, jarrah and karri. Much of it is shipped in the form of railway sleepers, the value of which represented more than two-fifths of that of all timber exported during the ten years under review.

Income from the export of timber was extremely variable during the period, ranging from a minimum of £1·92 million in 1954–55, when 41·7 million super. feet were shipped, to a maximum of £4·21 million in 1958–59, when 77·6 million super. feet were exported. Shipments amounted in total to 599 million super. feet, valued at £31·3 million. The average annual value of consignments of all timber was £3·13 million, sales of sleepers accounting, on the average, for £1·36 million and other timber, for £1·77 million.

EXPORTS OF TIMBER (*a*)

Item	Year ended 30th June :—									
	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
QUANTITY ('000 super. feet)										
Railway Sleepers	11,318	15,782	15,254	22,570	24,737	35,905	40,557	33,695	25,469	32,829
Other (*a*)	36,267	30,536	26,494	32,021	31,410	30,967	37,004	39,906	40,943	35,230
Total (*a*)	47,585	46,318	41,748	54,591	56,147	66,872	77,561	73,601	66,412	68,059
VALUE (£'000)										
Railway Sleepers	403	804	696	1,147	1,411	2,026	2,239	1,803	1,298	1,760
Other (*a*)	1,671	1,436	1,228	1,652	1,697	1,722	1,968	2,077	2,290	2,004
Total (*a*)	2,074	2,240	1,924	2,799	3,108	3,748	4,207	3,880	3,588	3,764

(*a*) Excludes plywood and veneers and small quantities of timber for which super. footage is not recorded.

The other Australian States provided by far the most important market, taking quantities worth well over half the value of all timber exported during the ten years. Interstate sales accounted for about one-third of the total income from sleepers and almost two-thirds of that from other timber. New Zealand was the principal oversea buyer of sleepers, and significant sales were made to India, the United Kingdom, Iraq and the Republic of South Africa. Exports of other timber to oversea destinations were mainly to the United Kingdom, New Zealand and the Republic of South Africa.

SUMMARY OF EXPORTS DURING 1960-61 AND 1961-62

Principal Exports during 1960-61 and 1961-62

The table on page 341 gives details of Western Australia's principal exports during each of the years 1960–61 and 1961–62.

Of the amounts shown in the table under the heading of Ships' Stores, approximately three-quarters represented bunker oil. Details of this and other commodities supplied to ships during each of the years 1960–61 and 1961–62 are given in the following table.

EXPORTS IN THE FORM OF SHIPS' STORES

Commodity	Unit of Quantity	Year ended 30th June :—			
		1961		1962	
		Quantity	Value	Quantity	Value
			£		£
Alcoholic Beverages	gal.	187,020	83,473	193,650	101,571
Coal	ton	3,884	37,358	3,264	29,209
Fodders for Animals	cwt.	2,518	3,406	17,558	20,280
Foodstuffs—					
Eggs in Shell	doz.	166,184	47,891	171,682	48,743
Fish	lb.	212,485	58,721	232,749	61,461
Fruit	n.a.	n.a.	43,983	n.a.	41,579
Meats	lb.	1,733,783	205,090	1,608,276	220,541
Vegetables	n.a.	n.a.	105,803	n.a.	120,833
Petroleum Oils and Spirits—					
Bunker Oil	gal.	99,299,803	3,941,174	78,438,789	3,402,605
Other (*a*)	,,	569,160	111,912	274,325	112,948
Other Ships' Stores (*b*)	n.a.	n.a.	503,536	n.a.	529,542
Total	n.a.	n.a.	5,142,347	n.a.	4,689,312

n.a. = " not applicable " or " not available." (*a*) Includes fuel for aircraft. (*b*) Where the value of ships' stores recorded in any one entry is less than £50, the stores concerned are not allocated according to commodity. This item includes amounts of £330,259 in 1960–61 and £355,082 in 1961–62 not so allocated.

PRINCIPAL EXPORTS—QUANTITY AND VALUE

Commodity	Unit of Quantity	Year ended 30th June :—			
		1961		1962	
		Quantity	Value	Quantity	Value
			£		£
Ale and Beer	gal.	110,767	41,897	113,354	43,644
Animals—					
Cattle	number	5,811	158,872	368	27,456
Pigs	number	20	1,297	120	3,053
Sheep	number	147,355	440,325	198,200	627,060
Apparel (other than headwear and footwear)	n.a.	n.a.	296,855	n.a.	246,977
Asbestos	ton	10,606	1,181,942	12,647	1,376,584
Barley	bushel	5,765,128	2,316,649	5,410,809	2,621,020
Butter	lb.	668,777	123,742	1,666,239	265,805
Confectionery	lb.	2,160,817	324,024	1,767,983	281,263
Eggs in Shell	doz.	1,270,722	255,000	1,155,910	245,339
Eggs in Liquid or Powdered Form	lb.	457,424	59,245	68,753	10,636
Fish—					
Crayfish Tails, Frozen	lb.	5,105,607	2,940,348	7,951,778	4,888,904
Preserved in Containers	lb.	790,412	112,688	1,149,215	164,344
Flour	short ton (*a*)	135,375	3,919,199	97,951	2,943,981
Food for Animals	n.a.	n.a.	413,245	n.a.	247,113
Fruit, Fresh—					
Apples	bushel	1,284,353	1,975,333	665,667	1,126,445
Other	n.a.	n.a.	342,547	n.a.	282,687
Fruit, Dried—Currants	lb.	3,756,452	214,306	1,087,836	64,562
Gold Bullion	fine oz.	2,532,438	39,635,738	452,624	7,097,361
Ilmenite Concentrates	ton	130,357	599,234	156,467	720,477
Iron Ore	ton	1,018,663	1,050,267	1,052,315	1,104,284
Iron and Steel	cwt.	3,409,537	6,390,638	3,653,240	6,909,915
Leather	n.a.	n.a.	256,184	n.a.	293,129
Machines and Machinery—					
Agricultural	n.a.	n.a.	294,798	n.a.	337,356
Earthworking and Mining	n.a.	n.a.	291,745	n.a.	630,654
Tractors and Parts	n.a.	n.a.	1,619,734	n.a.	1,421,563
Other (*b*)	n.a.	n.a.	2,080,338	n.a.	1,951,347
Manganese Ore	ton	46,978	633,665	107,584	1,472,576
Meats, Frozen and Chilled—					
Beef and Veal	lb.	27,365,093	3,070,662	27,654,089	3,149,718
Lamb	lb.	11,505,777	1,068,920	9,229,060	606,278
Mutton	lb.	13,553,359	881,748	9,439,456	611,596
Pork	lb.	4,175,737	750,361	6,946,472	1,012,611
Other (*c*)	lb.	5,861,135	680,488	5,726,915	553,361
Meats Preserved in Containers	lb.	795,942	109,088	681,066	89,275
Metal Scrap, Non-ferrous	cwt.	48,353	317,119	31,760	245,100
Milk and Cream, Condensed and Concentrated	lb.	845,561	60,418	1,415,179	103,048
Oats	bushel	11,836,058	4,358,881	9,529,359	3,957,022
Paper, Paper Boards and Manufactures thereof	n.a.	n.a.	185,500	n.a.	152,876
Pearl-shell	cwt.	11,283	251,173	8,924	160,154
Petroleum Oils and Spirits, Refined	gal.	557,264,317	27,459,422	561,273,250	25,319,703
Plywood and Veneers	n.a.	n.a.	250,704	n.a.	237,984
Sausage Casings	n.a.	n.a.	104,301	n.a.	162,082
Skins and Hides—					
Cattle and Calf	lb.	4,079,803	384,678	4,703,529	475,142
Sheep and Lamb	lb.	11,986,311	1,508,332	12,541,091	1,773,903
Other	n.a.	n.a.	21,230	n.a.	40,781
Tanning Substances	cwt.	70,018	201,957	97,798	281,364
Timber—					
Railway Sleepers	super ft.	25,468,908	1,298,107	32,828,793	1,759,830
Other	super ft.	40,943,343	2,289,633	35,230,502	2,004,274
Tobacco, Unmanufactured (leaf)	lb.	1,080,777	454,405	633,016	167,766
Vegetables, Fresh—					
Onions	cwt.	60,663	77,532	66,211	109,386
Potatoes	cwt.	153,933	218,537	203,308	316,100
Tomatoes	cwt.	37,150	178,586	39,170	148,293
Other	n.a.	n.a.	305,770	n.a.	294,363
Wheat	bushel	52,480,005	35,639,958	73,882,791	52,178,050
Wool, Greasy	lb.	131,902,870	29,644,979	136,894,452	34,088,411
Wool, Scoured	lb.	26,127,998	7,775,992	25,330,685	7,844,197
All Other Commodities	n.a.	n.a.	12,108,437	n.a.	10,874,212
TOTAL	n.a.	n.a.	199,626,773	n.a.	186,122,415
Ships' Stores—					
Bunker Oil	gal.	99,299,803	3,941,174	78,438,789	3,402,605
Other Ships' Stores (*d*)	n.a.	n.a.	1,201,173	n.a.	1,286,707
TOTAL	n.a.	n.a.	5,142,347	n.a.	4,689,312
TOTAL EXPORTS	n.a.	n.a.	204,769,120	n.a.	190,811,727

n.a. = " not applicable " or " not available." (*a*) Short ton = 2,000 lb. (*b*) Excludes dynamo electrical machinery. (*c*) Comprises mainly offals, poultry and rabbits. (*d*) For further details, see table on page 340.

OVERSEA AND INTERSTATE TRADE OF PORTS

The Port of Fremantle, Western Australia's principal port, covers an area of 180 square miles. The inner harbour, which has 18 deep-water land-backed berths, provides more than 690,000 square feet of covered storage space and 11,148 feet of wharf berth accommodation. The outer harbour has three main anchorages, Gage Roads, Owen Anchorage and Cockburn Sound. Deep-water jetties at the Sound serve an oil refinery and a steelworks. The predominance of the Port of Fremantle in the State's trade is clearly shown in the following table.

A system of smaller ports extends along the entire coastline from Esperance in the south to Wyndham in the north.

In 1961–62 the total value of Geraldton's oversea imports and exports was £14·0 million. Rock phosphate and sulphur, for use in the manufacture of superphosphate fertilizer, were the principal imports, and wheat, barley and oats the main items of export. Manganese ore was shipped to Tasmania. Albany's total oversea trade was valued at £13·0 million. Rock phosphate and sulphur were the largest import items, while commodities exported included wheat, oats, barley, wool, whale oil, apples and frozen and chilled meats. Oversea trade at Bunbury had a total value of £7·49 million. Imports consisted mainly of rock phosphate and sulphur, and among the exports were mineral sands, wheat, timber and oats. At Esperance, inward cargo comprised mainly petroleum products, and exports included gypsum, copper concentrates and wheat. Timber was the principal item of export from Busselton.

Among the ports of the north-west and northern coasts, shipments from Yampi, consisting almost entirely of iron ore consigned to New South Wales, were greatest. Port Hedland exported mineral ores, mainly manganese, and wool. Asbestos fibre and wool were shipped from Point Samson. Exports from Wyndham were predominantly frozen and chilled meats, skins, hides and tallow, and from Carnarvon, whale oil and wool. Consignments of wool, frozen and chilled meats and pearl-shell were sent from Broome, while Derby exported frozen and chilled meats, cattle and wool.

OVERSEA TRADE OF PORTS

Port	Year ended 30th June :—			
	1961		1962	
	Imports	Exports	Imports	Exports
	£	£	£	£
Port of Fremantle	53,625,989	124,916,752	48,421,646	107,059,262
Other Ports—				
Albany	541,995	11,136,074	402,976	12,625,822
Broome	5,482	425,064	4,931	340,086
Bunbury	795,607	6,504,274	862,073	6,623,366
Busselton				28,946
Carnarvon	5	294,023		286,282
Derby		138,559		25,329
Esperance		219,448	2,635	463,002
Geraldton	282,309	9,118,441	364,636	13,598,461
Onslow				
Point Samson	9,376	360,115	29,788	800,222
Port Hedland	4,766	690,913	293	1,267,743
Wyndham		862,321		962,805
Yampi				
Total	1,639,540	29,749,232	1,667,332	37,022,064
All Ports	55,265,529	154,665,984	50,088,978	144,081,326
Ships' Stores	n.a.	4,872,498	n.a.	4,417,348
GRAND TOTAL	55,265,529	159,538,482	50,088,978	148,498,674

n.a. = not applicable.

DIRECTION OF TRADE

The greater part of Western Australia's imports comprise purchases from other Australian States, which in 1961–62 accounted for £123 million, or 71·0 per cent. of the value of all imports amounting to £173 million. The United Kingdom ranked next in importance, providing goods worth £11·3 million. Imports from other Commonwealth countries were valued at £7·75 million. Purchases from foreign countries, more than half of which represented crude petroleum from Iran, Iraq, Kuwait and Qatar, amounted to £31·0 million.

VALUE OF IMPORTS AND EXPORTS ACCORDING TO COUNTRY OF ORIGIN OR DESTINATION

Country of Origin or Destination	Imports		Exports	
	Year ended 30th June :—		Year ended 30th June :—	
	1961	1962	1961	1962
	£	£	£	£
AUSTRALIA—				
New South Wales	52,319,186	51,126,411	17,580,385	16,284,953
Victoria	51,230,759	53,094,193	11,179,489	9,856,592
Queensland	4,060,899	3,960,113	1,064,596	892,463
South Australia	12,859,607	12,189,842	13,698,241	13,365,735
Tasmania	1,968,344	1,977,181	380,009	652,986
Northern Territory	298,111	256,120	1,058,069	988,360
TOTAL	122,736,906	122,603,860	44,960,789	42,041,089
UNITED KINGDOM	13,174,534	11,308,912	59,808,488	23,020,887
OTHER COMMONWEALTH COUNTRIES—				
Aden	1,193,262	1,380,080	1,701,462	676,051
Canada	936,957	727,567	562,789	586,639
Ceylon	775,167	870,288	1,057,595	1,280,113
Christmas Island (Indian Ocean)	405,296	394,423	371,027	343,624
Hong Kong	233,636	272,456	1,780,722	2,820,139
India	2,069,726	1,421,296	3,452,973	6,813,642
Malaya, Federation of	191,042	143,789	1,671,782	1,536,348
Malta	175	724	298,044	447,120
Mauritius	1,965	3,583	217,272	221,688
Nauru	462,227	675,777	2,063	129,528
New Zealand	134,779	283,410	4,675,504	4,202,218
North Borneo	20,727	21,970	3,900	6,087
Pakistan	481,707	528,571	2,362,776	581,571
Singapore	297,922	154,835	3,831,263	3,819,753
Other	1,245,462	874,418	3,414,783	1,359,101
TOTAL	8,450,050	7,753,187	25,403,955	24,823,622
FOREIGN COUNTRIES—				
Argentina	4,458	10,036	699,871	12
Austria	44,149	46,084	25,914	42,808
Belgium-Luxembourg	605,770	313,824	2,071,426	1,760,725
Burma	374	2,125	141,104	45,718
China, Republic of—Formosa	16,571	11,926	277,126	201,127
China, Republic of—Mainland	75,824	56,513	8,569,514	20,634,772
Czechoslovakia	47,937	53,299	1,640,155	633,809
Denmark	126,512	123,601	93,963	71,020
France	377,130	351,553	4,101,878	4,917,737
Germany, Eastern	20,907	13,441	91,638	303,936
Germany, Federal Republic of	1,666,649	1,161,700	5,377,319	9,195,796
Greece	18,456	12,604	219,723	90,997
Indonesia	818,536	381,901	581,453	124,216
Iran	8,580,034	9,011,863	792,197	305,340
Iraq	3,024,530	3,676,853	1,494,287	635,312
Italy	564,752	719,709	3,434,119	3,599,966
Japan	1,868,913	1,364,313	16,763,912	22,285,127
Korea, North			1,909,076	853,815
Korea, Republic of		2,032	282,705	63,334
Kuwait	3,036,617	3,468,444	570,828	445,701
Mexico	192,843	154,280	151,418	213,166
Mozambique	458	487	1,096,002	1,096,072
Netherlands	398,762	303,198	1,270,016	1,480,390
Norway	164,699	152,982	54,981	41,012
Philippines	19,770	20,230	234,150	117,683
Poland	2,363	5,182	711,669	710,078
Portugal	116,926	83,391	103,256	52,522
Qatar	6,643,266	3,155,603	137,401	90,803
South Africa, Republic of	277,248	341,439	1,059,946	1,216,817
Spain	131,917	153,755	413,140	5,097,077
Sweden	658,527	549,159	787,067	436,987
Switzerland	168,728	150,957	434,769	84,544
Turkey	6,021	4,888	757,579	885,930
Union of Soviet Socialist Republics	846	930	1,473,155	2,196,696
United Arab Republic	1,479	2,221	472,740	320,967
United States of America	3,438,048	3,893,670	7,745,394	11,411,390
Other	482,407	1,223,057	2,456,240	3,324,121
TOTAL	33,602,427	30,977,250	68,497,131	94,987,523
NOT STATED	38,518	49,629	956,410	1,249,294
SHIPS' STORES			5,142,347	4,689,312
GRAND TOTAL	178,002,435	172,692,838	204,769,120	190,811,727

VALUE OF OVERSEA TRADE ACCORDING TO GEOGRAPHIC REGION YEAR ENDED 30th JUNE, 1962

(£'000)

Class No.	Name of Class	Geographic Region						Total
		Africa	North America	South America	Asia	Europe	Other (a)	
	IMPORTS							
I	Foodstuffs of Animal Origin	119	90		112	333	3	657
II	Foodstuffs of Vegetable Origin	31	78	42	1,170	210	3	1,534
III	Spirituous and Alcoholic Liquors		1			218		219
IV	Tobacco, Cigarettes, Cigars and Snuff		15			27		42
V	Live Animals					3		3
VI	Animal Substances other than Foodstuffs				6	12		18
VII	Vegetable Substances and Fibres	165	8		100	94	22	389
VIII (A)	Yarns and Manufactured Fibres				1,180	82	2	1,264
VIII (B)	Textiles		97		1,147	1,021		2,265
VIII (C)	Apparel	1	8		58	118		185
IX	Oils, Fats and Waxes	20	277	135	21,805	225		22,462
X	Pigments, Paints and Varnishes		1		5	70		76
XI	Rocks and Minerals (including Ores and Concentrates)	77	487		3	112	1	680
XII (A)	Metals and Metal Manufactures	30	495		229	3,147	76	3,977
XII (B)	Dynamo Electrical Machinery and Appliances	1	182		28	838	4	1,053
XII (C)	Machines and Machinery (except Dynamo Electrical)	6	1,887		27	3,986	4	5,910
XIII (A)	Rubber and Rubber Manufactures		76		54	315	2	447
XIII (B)	Leather and Leather Manufactures		2			16		18
XIV	Wood and Wicker, Raw and Manufactured	10	42		423	56	6	537
XV	Earthenware, Cement, China, Glass, etc.	1	34		109	757		901
XVI (A)	Pulp, Paper and Board		360		15	496	191	1,062
XVI (B)	Paper Manufactures and Stationery		68		24	654	4	750
XVII	Sporting Materials, Toys, Fancy Goods, etc.		23		115	271		409
XVIII	Optical, Surgical, and Scientific Instruments and Apparatus		80		37	272	2	391
XIX	Chemicals, Medicinal Products, Essential Oils and Fertilizers	39	316	65	88	1,306	1,302	3,116
XX	Miscellaneous	67	210	12	255	1,046	134	1,724
XXI	Gold and Silver ; Bronze Specie							
	TOTAL—OVERSEA IMPORTS	567	4,837	254	26,990	15,685	1,756	50,089
	EXPORTS (b)							
I	Foodstuffs of Animal Origin	130	7,079	1	1,405	2,295	134	11,044
II	Foodstuffs of Vegetable Origin	886	36		38,462	24,748	39	64,171
III	Spirituous and Alcoholic Liquors	4	2		20	8	10	44
IV	Tobacco, Cigarettes, Cigars and Snuff						1	1
V	Live Animals	12			669	2	2	685
VI	Animal Substances other than Foodstuffs	63	4,008	52	15,351	22,384	3,385	45,243
VII	Vegetable Substances and Fibres	1	201		17	26	9	254
VIII (A)	Yarns and Manufactured Fibres				3	4	1	8
VIII (B)	Textiles				1	1	2	4
VIII (C)	Apparel	5			3		1	9
IX	Oils, Fats and Waxes	2,115	38		4,379	1,035	4,243	11,810
X	Pigments, Paints and Varnishes				2		10	12
XI	Rocks and Minerals (including Ores and Concentrates)		621		2,194	884	1	3,700
XII (A)	Metals and Metal Manufactures	11	148		2,494	511	204	3,368
XII (B)	Dynamo Electrical Machinery and Appliances	4			12	5	16	37
XII (C)	Machines and Machinery (except Dynamo Electrical)	27	2		223	77	45	374
XIII (A)	Rubber and Rubber Manufactures				1	1	8	10
XIII (B)	Leather and Leather Manufactures	1			85	85		171
XIV	Wood and Wicker, Raw and Manufactured	237	7		380	954	520	2,098
XV	Earthenware, Cement, China, Glass, etc.				2		14	16
XVI (A)	Pulp, Paper and Board				2	2		4
XVI (B)	Paper Manufactures and Stationery	1	1		5	5	16	28
XVII	Sporting Materials, Toys, Fancy Goods, etc.		2		1	18		21
XVIII	Optical, Surgical, and Scientific Instruments and Apparatus	15	11		1	8	8	43
XIX	Chemicals, Medicinal Products, Essential Oils and Fertilizers	1	59	4	23	162	14	263
XX	Miscellaneous	9	34		341	66	211	661
XXI	Gold and Silver ; Bronze Specie					2		2
	TOTAL—OVERSEA EXPORTS (b)	3,522	12,249	57	66,076	53,283	8,894	144,081

(a) Includes New Zealand, other islands of the Pacific, and the Union of Soviet Socialist Republics. Also includes the value of imports from and exports to countries of " Not Stated " origin or destination. (b) Excluding ships' stores.

Of exports (excluding ships' stores) valued at £186 million in 1961–62, other Australian States took goods worth £42·0 million, the United Kingdom £23·0 million, other Commonwealth countries £24·8 million, and foreign countries £95·0 million.

The table on page 343 shows details of Western Australia's imports and exports during 1960–61 and 1961–62 classified according to State or country of origin or destination.

The table on page 344 gives a dissection, according to geographic region, of the value of oversea imports and exports during 1961–62 in each statistical class. The Asian region was the principal source of imports, largely on account of purchases of crude petroleum. Next in importance was Europe, which supplied goods mainly in the classes Machines and Machinery; Metals and Metal Manufactures; Chemicals, Medicinal Products, Essential Oils and Fertilizers; and Textiles. Asia was the most important region for exports, with European markets ranking next in order. Supplies to both Asia and Europe were principally in the classes Foodstuffs of Vegetable Origin (mainly wheat) and Animal Substances other than Foodstuffs (mainly wool).

CUSTOMS AND EXCISE

Under the provisions of the Commonwealth of Australia Constitution Act, the Commonwealth Parliament is empowered to pass laws in respect to trade and commerce with other countries, and the authority for the collection and control of customs and excise duties is thus vested in the Commonwealth Government. The principal Acts affecting oversea trade are the Customs Act 1901–1960, the administrative Act under which the Department of Customs and Excise functions, and the various Customs Tariff Acts which provide the statutory authority for imposing the actual rates of duty in force from time to time.

CUSTOMS AND EXCISE—NET COLLECTIONS IN WESTERN AUSTRALIA

Class No.	Name of Customs Class and Excise Division	Year ended 30th June :— 1961	1962
	CUSTOMS	£	£
I	Foodstuffs of Animal Origin	29,356	32,076
II	Foodstuffs of Vegetable Origin	115,758	134,242
III	Spirituous and Alcoholic Liquors	285,644	342,150
IV	Tobacco, Cigars, Cigarettes and Snuff	73,020	75,938
V	Live Animals		
VI	Animal Substances, other than Foodstuffs	118	1,013
VII	Vegetable Substances and Fibres	4,778	12,474
VIII (A)	Yarns and Manufactured Fibres	13,367	10,420
VIII (B)	Textiles	351,305	304,597
VIII (C)	Apparel	88,496	65,848
IX	Oils, Fats and Waxes—		
	Aviation Spirit	70,458	73,186
	Motor Spirit and Solvents	498,791	572,709
	Aviation Turbine Fuel	9,666	9,518
	Diesel Fuel	34,030	44,955
	Other Oils, Fats and Waxes	125,645	107,785
X	Pigments, Paints and Varnishes	6,431	6,081
XI	Rocks and Minerals (including Ores and Concentrates)	1,944	3,195
XII (A)	Metals and Metal Manufactures—		
	Motor Vehicles	165,424	176,933
	Other	226,550	221,455
XII (B)	Dynamo Electrical Machinery and Appliances	87,605	75,802
XII (C)	Machines and Machinery (except Dynamo Electrical)	381,164	384,911
XIII (A)	Rubber and Rubber Manufactures	35,794	42,938
XIII (B)	Leather and Leather Manufactures	9,517	3,183
XIV	Wood and Wicker, Raw and Manufactured	73,923	43,447
XV	Earthenware, Cement, China, Glass, etc.	151,512	152,416
XVI (A)	Pulp, Paper and Board	30,323	35,277
XVI (B)	Paper Manufactures and Stationery	23,320	30,208
XVII	Sporting Material, Toys, Fancy Goods, etc.	122,740	113,601
XVIII	Optical, Surgical and Scientific Instruments and Apparatus	28,058	25,435
XIX	Chemicals, Medicinal Products, Essential Oils and Fertilizers	26,456	83,103
XX	Miscellaneous	370,059	163,315
	Primage	89,992	69,251
	Sundry Undistributed Duties	6,259	5,294
	Other Miscellaneous Receipts	457	86
	Total Net Customs Duties	3,537,960	3,422,842
	EXCISE		
	Beer	7,446,416	7,855,117
	Spirits	302,429	302,750
	Tobacco, Cigars and Cigarettes	4,809,910	4,990,328
	Other Excise Duty	4,335,775	4,684,314
	Total Net Excise Duties	16,894,530	17,832,509
	TOTAL NET REVENUE	20,432,490	21,255,351

The Australian Customs Tariff has been developed in conformity with the policy of protecting economic and efficient Australian industries, and of granting preferential treatment to imports from certain Commonwealth countries. Three classes of tariff are in operation, namely the British Preferential Tariff, the Intermediate Tariff and the General Tariff.

The British Preferential Tariff applies to goods which are the produce or manufacture of the United Kingdom, provided that such goods comply with laws and statutory regulations affecting the grant of preference. The British Preferential Tariff applies also to the Republic of Ireland and, with the exception of a relatively small number of commodities which carry special rates of duty, to Canada, New Zealand and the Territory of Papua and New Guinea, and to some other Commonwealth countries in relation to certain goods.

The countries to which the Intermediate Tariff applies include those with which Australia has concluded trade agreements and countries which accord to Australia reciprocal most-favoured-nation tariff treatment by reason of agreement between those countries and the United Kingdom.

The General Tariff applies to goods other than those to which the British Preferential Tariff or Intermediate Tariff or special rates under trade agreements apply.

In addition to duties imposed by the Customs Tariff, *ad valorem* primage duties at rates of 4 per cent., 5 per cent. or 10 per cent. are charged on some goods according to type and origin.

The Tariff Board Act 1921–1962 constitutes a Tariff Board of eight members to advise the Government on matters relating to the protection and encouragement of Australian industry and on the general effect of the working of the Customs and Excise Tariffs. The Tariff Board conducts public hearings in connexion with any revision of the Tariff, proposals concerning bounties, or complaints that a manufacturer is taking undue advantage of the protection afforded by the Tariff.

An amendment made to the Tariff Board Act in 1962 establishes a Special Advisory Authority to inquire into cases where urgent action may be necessary to protect an Australian industry against import competition pending receipt and consideration of a full report by the Tariff Board.

The following table shows the rates of excise duty applying to certain commodities, the quantities excised and the gross amounts of duty collected in Western Australia during each of the years 1960–61 and 1961–62.

EXCISE DUTY—WESTERN AUSTRALIA

Commodity	Unit of Quantity	Rate of Duty	Year ended 30th June :— 1961 Quantity	1961 Gross Collections	1962 Quantity	1962 Gross Collections
				£		£
Beer	gal.	s. d. 9 10	15,191,264	7,469,054	16,014,837	7,873,966
Spirits, Potable—						
Brandy	pf. gal.	49 0	42,535	104,237	44,748	109,657
Gin	,,	82 0	13,037	53,481	13,498	55,360
Whisky	,,	80 0	21,748	87,039	20,226	80,934
Rum	,,	82 0	7,523	30,871	7,091	29,089
Liqueurs	,,	81 0	1,563	6,363	1,814	7,376
Vodka	,,	81 0	375	1,548	599	2,460
Flavoured Spirituous Liquors	,,	81 0	50	217	149	625
Total	,,	n.a.	86,831	283,756	88,125	285,501
Other Spirits for—						
Fortifying Wine	,,	4 0	57,926	11,588	52,149	10,430
Industrial Purposes	,,	25 0	4,052	5,072	4,243	5,310
Vinegar Making	,,	2 0	10,097	1,009	11,479	1,149
Manufacture of—		s. d. s. d.				
Essences	,,	10 0 to 12 0	2,032	1,133	2,476	1,351
Scents and Toilet Preparations	,,	14 0 to 16 0	105	83	21	18
Petrol—		d. d.				
Aviation	gal.	(*a*) $8\frac{1}{2}$ to $11\frac{3}{4}$	676,546	30,998	99,328	3,518
Other	,,	(*a*) $11\frac{1}{2}$ to $11\frac{3}{4}$	80,920,144	3,877,424	86,095,120	4,203,029
Diesel Fuel	,,	s. d. 1 0	4,779,960	238,999	5,657,873	282,894
Coal	ton	(*b*) 5 / (*c*) 4	769,300	16,028	905,965	15,100
Other (*d*)	n.a.	n.a.	n.a.	4,982,601	n.a.	5,170,423
TOTAL COLLECTIONS			n.a.	16,917,745	n.a.	17,852,689

n.a. = not applicable. (*a*) Rate of $11\frac{3}{4}$d. (previously $11\frac{1}{2}$d.) operative from 16th August, 1961. (*b*) Operative up to 31st May, 1961. (*c*) Operative from 1st June, 1961. (*d*) Includes excise duty paid on tobacco, cigars, cigarettes, cigarette papers and matches.

CHAPTER IX — *continued*

PART 2 —TRANSPORT

Western Australia's main transport systems are based generally on Perth, the capital, and the principal port, at Fremantle. Subsidiary systems are centred on a number of outports north and south of Fremantle and on some inland towns.

Fremantle handles by far the greatest proportion of oversea and interstate cargoes and a considerable volume of the intrastate freight. The railway system extends from Fremantle, Perth and Midland for hundreds of miles into the mining, agricultural, pastoral and forest areas in the southern half of the State. There is also a well-developed road system in this area, and the coastal towns in the north-west and the north are connected by road with the south and with the pastoral and mining areas of the hinterland. International flights operate through the airport at Perth, which is also the centre of a comprehensive network of services to towns in Western Australia and to the capital cities of other States.

SHIPPING

Western Australia's sea-borne trade is concentrated on the Port of Fremantle, with a number of outports handling a smaller, though significant, volume of traffic. The outports are Geraldton, Bunbury, Busselton, Albany and Esperance in the more highly-developed south-western and southern part of the State, and Carnarvon, Onslow, Point Samson, Port Hedland, Broome, Derby, Yampi and Wyndham, which serve the less closely-settled areas of the north-west and the north.

The following table shows the number and net tonnage of vessels, excluding warships, entered at each port, and the tonnage of cargo discharged at and shipped from each port, during the years 1960–61 and 1961–62. The net tonnage of a vessel, expressed in tons of 100 cubic feet, represents the volume of enclosed space that can be used for cargo and passengers. Cargo shipping charges are based mainly on the ton weight of 2,240 lb. but may also be levied on the basis of the ton measurement, a unit equivalent to 40 cubic feet of space. Statistics are compiled accordingly in terms of " tons weight " or " tons measurement." In order to provide a ready comparison, as in the following table, of the volume of cargo handled at the several ports or in different years, the amounts recorded in the two categories have been aggregated. In the tables on page 348, details or cargo handled at each port during 1961–62 are presented separately on the basis of " tons weight " and " tons measurement."

VESSELS ENTERED AND CARGO HANDLED AT PORTS

Port	Vessels Entered				Cargo Handled			
	Year ended 30th June :				Year ended 30th June :			
	1961		1962		1961		1962	
	Number	Net Tons	Number	Net Tons	Discharged	Shipped	Discharged	Shipped
					tons	tons	tons	tons
Port of Fremantle	1,476	8,047,487	1,491	8,016,672	4,385,480	3,967,987	4,480,226	4,283,414
Other Ports—								
Albany	131	601,519	144	672,206	129,535	315,811	147,233	347,573
Broome	93	141,184	87	133,994	7,298	5,437	14,162	5,412
Bunbury	127	485,262	126	499,209	121,436	401,049	153,719	419,712
Busselton	11	21,321	22	39,860		11,391		18,180
Carnarvon	73	112,657	71	109,594	2,663	4,725	8,514	8,774
Derby	98	141,468	84	137,154	16,414	11,886	23,390	18,719
Esperance	29	144,598	36	202,496	35,486	17,088	44,037	38,389
Geraldton	122	410,041	146	493,311	95,516	343,320	117,770	535,918
Onslow	89	132,703	67	101,763	2,920	1,425	1,967	1,076
Point Samson	108	178,099	104	171,325	8,884	11,440	11,079	15,577
Port Hedland	92	137,709	103	153,974	16,507	44,245	17,289	91,265
Wyndham	68	131,727	83	152,979	29,318	12,568	40,552	13,340
Yampi	147	593,609	142	631,130	7,554	1,090,626	10,076	1,378,121
Total	1,188	3,231,897	1,215	3,498,995	473,531	2,271,011	589,788	2,892,056
All Ports	2,664	11,279,384	2,706	11,515,667	4,859,011	6,238,998	5,070,014	7,175,470

TONNAGE OF OVERSEA, INTERSTATE AND INTRASTATE CARGO: 1961–62

Port	Oversea		Interstate		Intrastate		Total	
	Tons Weight	Tons Measurement	Tons Weight	Tons Measurement	Tons Weight	Tons Measurement	Tons Weight	Tons Measurement
DISCHARGED								
Port of Fremantle	3,738,577	117,221	514,724	61,940	29,767	17,997	4,283,068	197,158
Other Ports—								
Albany	90,539	1,050	1,790	1,750	36,614	15,490	128,943	18,290
Broome	36	52			1,977	12,097	2,013	12,149
Bunbury	123,059		3,087	45	27,528		153,674	45
Busselton								
Carnarvon	2,527				5,987		8,514	
Derby	3,596				7,059	12,735	10,655	12,735
Esperance	6,089		37,948				44,037	
Geraldton	65,394	28			52,346	2	117,740	30
Onslow					1,967		1,967	
Point Samson	4,075	55		44	3,160	3,745	7,235	3,844
Port Hedland	2,905	1,209			6,822	6,353	9,727	7,562
Wyndham	1,181	345	35		19,850	19,141	21,066	19,486
Yampi			5,127		4,948	1	10,075	1
Total	299,401	2,739	47,987	1,839	168,258	69,564	515,646	74,142
All Ports	4,037,978	119,960	562,711	63,779	198,025	87,561	4,798,714	271,300
SHIPPED								
Port of Fremantle	2,725,435	79,002	1,233,621	20,054	168,457	56,845	4,127,513	155,901
Other Ports—								
Albany	335,362	10,495	1,434	181	72	29	336,868	10,705
Broome	324	910			1,355	2,823	1,679	3,733
Bunbury	334,154	66,180	15,380	3,038		960	349,534	70,178
Busselton		1,052	11,458	5,670			11,458	6,722
Carnarvon	3,283				5,491		8,774	
Derby	200	137			1,189	17,193	1,389	17,330
Esperance	30,348		8,041				38,389	
Geraldton	511,578	4,173	18,881		1,219	67	531,678	4,240
Onslow					1,076		1,076	
Point Samson	6,953				7,853	771	14,806	771
Port Hedland	69,008	10,295	6,752		3,661	1,549	79,421	11,844
Wyndham	5,584				2,398	5,358	7,982	5,358
Yampi			1,377,834		283	4	1,378,117	4
Total	1,296,794	93,242	1,439,780	8,889	24,597	28,754	2,761,171	130,885
All Ports	4,022,229	172,244	2,673,401	28,943	193,054	85,599	6,888,684	286,786

Apart from general cargo, oversea and interstate consignments discharged were principally petroleum products, iron and steel, rock phosphate and sulphur. Outward cargoes, with the exception of refined petroleum products shipped from the Port of Fremantle (outer harbour), consisted largely of primary products, including minerals. Intrastate cargo at south-western and southern ports other than Fremantle comprised mainly refined petroleum. Cargoes discharged at the ports on the north-west and northern coasts are predominantly instrastate, as also are the shipments from some of them. The areas served by these ports are largely dependent for sea transport on the State Shipping Service. The Service was inaugurated by the State Government in 1912 to provide shipping facilities between ports within the State. Although it formerly operated to ports on the south-west and south coasts, as well as to those in the north-west and the north, its services are now confined to the northern routes and extend to Darwin in the Northern Territory. Some ships carry only freight, and others both passengers and freight. The operations of the Service are subsidized by the State Government to the extent that losses are made good from the Consolidated Revenue Fund. Besides general cargo, the freight discharged by ships of the Service at north-west and northern ports consists mainly of petrol, aviation spirit and other petroleum products, building materials, refrigerated cargo, vehicles and livestock. Regular freights include general household requirements and stores and equipment for the sheep and cattle stations of the pastoral areas of the north-west and the north. Cargoes carried south include asbestos and other minerals from Point Samson and Port Hedland, whale products from Carnarvon, meats, skins and hides, blood and bone manures and tallow from Wyndham, Broome and Derby and wool from a number of ports. In addition, large numbers of cattle and sheep are transported to Fremantle, mainly for slaughter at metropolitan abattoirs.

In the following tables vessels entered at and cleared from each Western Australian port during 1961–62 are classified according to the direction of the voyage on which each vessel was engaged. " Direction " is determined by reference to the port of commencement of the inward voyage or the port of termination of the outward voyage.

VESSELS ENTERED AT EACH PORT: 1961–62

Port of Entry	From Oversea Countries						From Other Australian States				From Other Western Australian Ports	
	Direct		Via Other Australian States		Via Other Western Australian Ports		Direct		Via Other Western Australian Ports			
	No.	Net Tons	No.	Net Tons	No.	Net Tons	No.	Net Tons	No.	Net Tons	No.	Net Tons
Port of Fremantle	722	4,563,955	36	288,490	64	225,030	490	2,348,760	85	242,164	94	348,273
Other Ports—												
Albany	48	236,331	4	19,667	8	29,874	48	217,267	4	15,700	32	153,367
Broome	7	11,300	1	6	5	10,590	4	5,049	20	33,613	50	73,436
Bunbury	32	136,551	1	3,321	16	80,589	18	64,392	3	16,086	56	198,270
Busselton											22	39,860
Carnarvon	1	1,160			6	11,345	1	1,134	26	40,282	37	55,673
Derby	12	25,459			6	10,848	5	7,982	13	22,977	48	69,888
Esperance	2	9,912	1	3,093	3	20,128	9	52,078	1	6,707	20	110,578
Geraldton	68	292,845			5	21,887	3	11,156	5	7,884	65	159,539
Onslow									18	30,137	49	71,626
Point Samson	12	28,112			9	18,717	2	2,244	25	41,361	56	80,891
Port Hedland	20	32,497	1	1,354	8	12,284	2	2,524	19	30,974	53	74,341
Wyndham	6	19,412	2	8,763	1	47	25	44,193	1	1,656	48	78,908
Yampi	13	41,546					78	448,660	19	91,920	32	49,004

VESSELS CLEARED FROM EACH PORT: 1961–62

Port of Clearance	To Oversea Countries						To Other Australian States				To Other Western Australian Ports	
	Direct		Via Other Australian States		Via Other Western Australian Ports		Direct		Via Other Western Australian Ports			
	No.	Net Tons	No.	Net Tons	No.	Net Tons	No.	Net Tons	No.	Net Tons	No.	Net Tons
Port of Fremantle	777	4,573,706	19	97,225	36	101,709	465	2,645,146	95	244,823	99	357,083
Other Ports—												
Albany	57	287,908	6	29,504	41	194,615	15	49,780	2	4,392	24	106,451
Broome	2	282	1	2,990	1	6			33	51,169	49	79,206
Bunbury	44	184,207	1	1,293	40	181,983	14	31,433	4	5,564	25	104,418
Busselton			1	1,274			20	36,361	1	2,225		
Carnarvon	1	3,028							30	46,922	40	59,644
Derby	4	6,354					2	3,598	25	38,619	53	89,191
Esperance	8	57,274	1	5,911	19	104,148	3	15,334			5	24,937
Geraldton	57	193,778			22	113,736	7	20,001	25	40,410	34	124,157
Onslow									27	44,161	40	57,602
Point Samson	3	4,380			1	1,982			29	46,344	71	118,619
Port Hedland	23	37,583			2	3,993	3	3,248	34	52,048	40	56,338
Wyndham	3	14,175			2	7,040	40	59,774			36	66,267
Yampi							110	596,877	31	48,827	6	9,619

Harbour Administration

The Port of Fremantle is controlled and operated by the Fremantle Harbour Trust, and those at Albany and Bunbury by Harbour Boards. The State Government is responsible for all other ports in Western Australia, their operations being under the direction of the Harbour and Light Department. Some ports were formerly under the control of the Western Australian Government Railways. Esperance, the last port remaining under Railways administration, was transferred to the control of the Harbour and Light Department from the 23rd January, 1962.

RAILWAYS

Railways operating in Western Australia for general and passenger traffic comprise the State Government system, part of the Commonwealth Government system, and a private line [1]. There are, in addition, private railways used for the haulage of timber. Timber railways formerly associated with State Government sawmilling activities passed from government ownership from the 30th June, 1961, when the trading concern known as State Building Supplies and the sawmill at Banksiadale operated by the Western Australian Government Railways were sold to private interests.

Origin and Development

The earliest railways in the Colony, built in 1871 from Busselton into the nearby jarrah forest and in 1872 between Rockingham and Jarrahdale, were private lines constructed for the transport of timber. In 1871 the Colony's first Loan Act was passed to finance, among other things, a survey for a railway in the Champion Bay district. This line, completed in 1879, was the first government railway and provided transport for lead and copper ores from Northampton to the port of Geraldton. Construction of the Eastern Railway began in 1879 and by March, 1881, Fremantle, Perth and Guildford had been connected. Extensions of the line were opened in 1884 to Chidlow, in 1885 to Spencers Brook and in 1886 to Northam. The first section of what is now the Great Southern Railway was completed in 1885 from Spencers Brook to York, and in the following year a second section, between York and Beverley, was opened to traffic. Meanwhile work on the Northern Railway system had been continued and Geraldton and Walkaway were connected in 1887. In 1888 a northward extension of the Eastern Railway from Clackline to Toodyay was completed. In 1889 Beverley and Albany were linked by a private railway built by the Western Australian Land Company under an agreement by which the company received a grant of 12,000 acres of Crown land adjacent to the line for every mile of track completed. By the end of 1890 there were 430 miles of railway open for general and passenger traffic, 188 miles being owned by the Government of the Colony and 242 miles by the Western Australian Land Company.

The South-Western Railway began operating in 1891 with the completion of a line from Bunbury to Boyanup. Perth was connected with Picton Junction in 1893 and Donnybrook with Boyanup in the same year. The system was extended from Boyanup to Busselton in 1895 and from Brunswick Junction to Collie and from Donnybrook to Bridgetown in 1898. The Eastern Goldfields Railway from Northam reached Southern Cross in 1894, Boorabbin and Kalgoorlie in 1896, and Menzies in 1899. Eastward extensions of the Northern Railway were completed between Narngulu and Mullewa in 1894 and between Mullewa and Cue in 1898. The Government enlarged its Great Southern Railway system in 1896 by purchasing the Western Australian Land Company's line from Beverley to Albany, and in 1898 by opening an eastward extension from York to Greenhills. A second private railway constructed on the land-grant principle, between Midland Junction and Walkaway, was completed by the Midland Railway Company in 1894. At the end of 1900, the Colony's railway system comprised 1,355 miles of government line and the 277 miles of the Midland Railway Company's line, representing a total increase of 1,202 miles in the ten years since 1890.

During the succeeding decade there began a greatly expanded programme of State Government railway construction, due partly to the extension of gold-mining activity but mainly associated with the spectacular development of Western Australia's wheat-growing lands. In 1903 the area sown to wheat, 138 thousand acres, was nearly half again as great as that in the previous year and the production, 1·88 million bushels, was almost double. Ten years later over one million acres were cropped for a harvest of 13·3 million bushels, and in 1915 the area sown was 1·73 million acres and production more than 18 million bushels. This increase had been made possible by the laying of many hundreds of miles of light, narrow-gauge railway, which could be built quickly and cheaply, to provide spur and loop lines from the trunk system into the expanding wheat belt. There were 1,612 miles of government line open for traffic in 1906 and 3,332 miles in 1915, the increase of 1,720 miles in nine years being equivalent to an average annual rate of construction of almost 200 miles. In the next 25 years another thousand miles of route were added, bringing the total length of the State Government system to a maximum of 4,381 miles in 1940. Since that time restricted construction and the closure of some lines have resulted in a gradual decrease, and by the 30th June, 1962 the total mileage of the system had declined to 3,851.

The Commonwealth Government's Trans-Australian Railway covers a distance of 1,108 miles between Kalgoorlie and Port Pirie (South Australia), 454 miles being in Western Australia. Construction was begun at Port Augusta, the original South Australian terminus of the line, in 1912 and the work was completed in 1917.

(1) See *Appendix*.

At the 30th June, 1962 there were 4,582 route miles of railway open for general and passenger traffic in Western Australia. Of this total, 3,851 miles were owned and operated by the State Government, 454 miles by the Commonwealth Government and 277 miles by the Midland Railway Company of Western Australia Limited. There were, in addition, 281 miles of privately-owned timber railways.

Western Australian Government Railways

The operations of the Western Australian Government Railways are controlled by a Commissioner of Railways responsible to the Minister for Railways.

Financial procedure for the State Government Railways is basically the same as for other Departments. Receipts from railway services are paid into the Consolidated Revenue Fund, and finance for railway operations and the servicing of debt is provided from the Fund by statutory appropriations. Loan moneys, for the construction and improvement of permanent way, for the purchase of traction units and rolling stock and for other capital outlay, are advanced by the Parliament from the General Loan Fund.

Serious difficulties were experienced in the rehabilitation of the railway system during the years immediately following the second World War. Rolling stock had become depleted and much of it was obsolete. A programme of replacement of existing locomotives was necessary and considerable work on permanent way was essential to bring roadbeds to the standard required for heavy haulage at higher speeds. The liabilities imposed by an extensive rail network, constructed primarily to assist the development of the mining, agricultural, pastoral and forestry industries, increased with rising operating costs and growing competition from other forms of transport. There has, however, been a significant growth in rail traffic in recent years, resulting from improvements to permanent way, the introduction of new rolling stock including diesel rail cars and heavy diesel-electric locomotives, the provision of modern handling facilities and the simplification of freighting methods. These developments have effected a marked improvement in the finances of the railway system and in 1960–61 operating revenues exceeded operating expenses for the first time since 1945–46. The operating surplus was £974,869 in 1960–61 ; £1,989,487 in 1961–62 ; and £1,097,999 in 1962–63. The reduction in 1962–63 was attributable mainly to a decrease in the tonnage of wheat and other grains carried.

During 1960–61, centralized traffic control for single-line working was brought into full operation on 40 miles of the South-Western Railway, between Armadale and Coolup. A start on the installation of automatic signalling on metropolitan lines has been made, and the section between North Fremantle and Claremont was brought into operation early in July, 1962. By March, 1963 the installation had been extended from Claremont to Perth.

Following an investigation into non-paying lines, a motion was agreed to by the Parliament in December, 1956 giving authority for the suspension, for a trial period, of rail services on 842 miles of line. The Railways (Cue-Big Bell and other Railways) Discontinuance Act was passed in 1960 giving legislative approval of the closure, subject to proclamation, of 670 miles of line on which services had been suspended. Up to the 30th June, 1962 a total of 272 miles of railway had been proclaimed closed, thus reducing to 3,851 miles the length of railway open for general and passenger traffic.

The Kwinana-Mundijong-Jarrahdale Railway Act, 1961, authorizing the construction of some 26 miles of railway for the haulage of bauxite to an alumina refinery at Kwinana, was assented to in November, 1961 and came into operation by proclamation on the 7th December, 1962. (See also letterpress *Alumina Refinery Agreement Act* on page 104.) The railway is of 3 ft. 6 in. gauge and was opened in July, 1963. It commences at a point on the Coogee-Kwinana line approximately 24 miles from Perth, crosses the existing South-Western Railway near Mundijong and terminates at Jarrahdale. Twenty-four hopper wagons, each with a payload capacity of 60 tons, have been built for carriage of the ore.

An agreement on a proposal to construct a standard gauge railway between Kwinana and Kalgoorlie, with a spur line to the iron-ore deposits at Koolyanobbing and connecting lines in the suburban area, was negotiated between the Commonwealth and State Governments and later ratified by the Parliaments in 1961. Further reference to this agreement and the associated legislation will be found on page 108, and later in this Part in the section *Railway Gauges*. An official ceremony to mark the commencement of construction of some 500 miles of standard gauge railway was held on the 5th November, 1962 at a site in the Avon valley 21 miles from Perth.

In addition to its normal railway operations, the Department provides road services for the carriage of passengers and freight, to which reference is made later in this Part under the heading of Railways Road Services. The activities of the Railways Road Services are excluded from the following table.

WESTERN AUSTRALIAN GOVERNMENT RAILWAYS (*a*)

Particulars	Year ended 30th June :				
	1958	1959	1960	1961	1962
Route Mileage at 30th June	4,117	4,117	4,120	4,123	3,851
Employees at 30th June	13,246	13,136	12,697	12,461	12,122
Number of—	'000	'000	'000	'000	'000
Train Miles Run	7,327	7,707	7,962	7,819	8,065
Passengers Carried—					
Suburban	13,353	13,880	13,171	12,026	11,308
Country	753	736	708	635	598
Total	14,106	14,616	13,879	12,661	11,906
Tonnage of Paying Goods Carried (*b*)	3,589	3,913	4,533	4,833	5,342
	£'000	£'000	£'000	£'000	£'000
Operating Revenues—					
Passenger Fares	1,090	1,087	1,143	1,124	1,140
Parcels and Mails	448	458	479	472	509
Paying Goods and Livestock	10,506	11,243	12,430	13,940	15,114
Miscellaneous	744	728	795	781	786
Total Operating Revenues	12,788	13,516	14,847	16,317	17,549
Operating Expenses	14,652	14,755	15,227	15,342	15,560
Excess of Operating Expenses over Revenues	1,864	1,239	380		
Excess of Operating Revenues over Expenses				975	1,989
Depreciation	1,439	1,552	1,680	1,805	1,894
Interest Charges	2,112	2,256	2,336	2,417	2,535
Total Deficit	5,415	5,047	4,396	3,247	2,440

(*a*) Excludes particulars of Railways Road Services (*see* page 353) and timber railways (*see* page 355). (*b*) Includes livestock.

The preceding table shows that more than four-fifths of the operating revenues of the Western Australian Government Railways are derived from the carriage of goods and livestock. As stated earlier, these railways were constructed primarily to assist the development of the agricultural, pastoral, forestry and mining industries. The continuing importance of the system to these industries will be readily appreciated from an examination of the following table, which shows the tonnage of paying goods and livestock carried during each year in the period from 1957–58 to 1961–62. The classification used in the table is that adopted by the Railways Department in dissecting its freight transport statistics.

WESTERN AUSTRALIAN GOVERNMENT RAILWAYS
TONNAGE OF PAYING GOODS (†) CARRIED

Freight Classification	Year ended 30th June:				
	1958	1959	1960	1961	1962
Wheat	785,454	904,088	1,434,383	1,661,117	1,945,756
Other Grain	91,887	284,599	244,728	334,137	300,229
Grain Products	86,934	73,736	68,902	100,501	83,424
Chaff	9,419	7,344	7,229	6,716	6,863
Fertilizers	422,094	409,148	450,659	443,411	482,495
Fruit and Vegetables	102,826	101,271	97,665	114,566	96,584
Wool	62,152	67,201	68,249	76,973	79,041
Timber	334,816	329,664	330,993	340,649	328,309
Firewood	11,932	10,184	5,027	2,814	2,328
Coal, Coke, Shale and Charcoal (*a*)	538,861	544,362	565,739	483,426	648,178
Ores and Minerals	245,101	246,715	270,690	304,914	405,155
Oil in Tank Wagons	163,006	172,506	175,472	165,664	168,636
Other Classifications	600,786	613,830	651,799	657,623	669,694
Livestock (‡)	133,646	148,519	161,079	140,717	125,619
Total	3,588,914	3,913,167	4,532,614	4,833,228	5,342,311
(‡) Number of Livestock Carried—					
Sheep	2,094,873	2,291,583	2,701,689	2,215,355	1,948,117
Cattle	106,930	130,581	126,663	107,260	94,197
Pigs	155,758	131,706	120,353	126,940	146,038
Horses	3,046	2,392	2,397	2,474	1,953

(†) Including livestock. (*a*) Predominantly local coal.



PORT OF FREMANTLE (OUTER HARBOUR)

Kwinana Industrial Area on Cockburn Sound

The industrial area at Kwinana is situated on Cockburn Sound about twelve miles south of the inner harbour at Fremantle. It came into being in 1955 when a major oil refinery (left background) was brought into production. A steel-rolling mill (middle distance) began operations in 1956 and an alumina refinery (foreground) in 1963. An integrated iron and steel industry, using iron ore from Koolyanobbing, is to be established at Kwinana before the end of 1968, in terms of the Broken Hill Proprietary Company's integrated Steel Works Agreement Act, 1960.

Commonwealth Government Railways

The Commonwealth Government Railways comprise four separate systems. These are the Trans-Australian Railway, operating partly in Western Australia and partly in South Australia ; the Central Australia Railway, partly in South Australia and partly in the Northern Territory ; the North Australia Railway, wholly in the Northern Territory ; and the Australian Capital Territory Railway.

Of the total length of 1,108 miles in the Trans-Australian Railway system between Kalgoorlie and Port Pirie (South Australia), 454 miles are in Western Australia. Although statistical details of activities on each of the four systems are available, it is not possible to give separate particulars of the operations in Western Australia of the Trans-Australian Railway. Some statistics relating to the Commonwealth Government Railways as a whole are shown in the table on page 357.

Private Railways

The only private railway open for general and passenger traffic in Western Australia was transferred to State Government control on the 1st August, 1964. The enabling legislation is The Midland Railway Company of Western Australia Limited Acquisition Agreement Act, 1963 authorizing the Government to purchase the assets of the Company. The railway is 277 miles in length and extends from Midland to Walkaway. The following table gives details of the Company's railway activities in each of the years from 1957–58 to 1961–62. Particulars of its road service are not included but are summarized in the second table on page 355.

PRIVATE RAILWAYS

Particulars	Year ended 30th June :				
	1958	1959	1960	1961	1962
Number of—					
Route Miles Operated	277	277	277	277	277
Train Miles Run	329,182	290,183	292,941	296,280	303,164
Passengers Carried	3,809	4,215	4,469	4,487	4,087
Employees at 30th June	469	417	434	444	456
Tonnage of Paying Goods Carried (*a*)	217,413	225,247	268,882	278,401	313,179
	£	£	£	£	£
Operating Revenues	701,685	722,284	831,823	929,877	964,045
Operating Expenses	647,491	554,723	607,293	662,014	684,727

(*a*) Includes livestock.

Railways Road Services

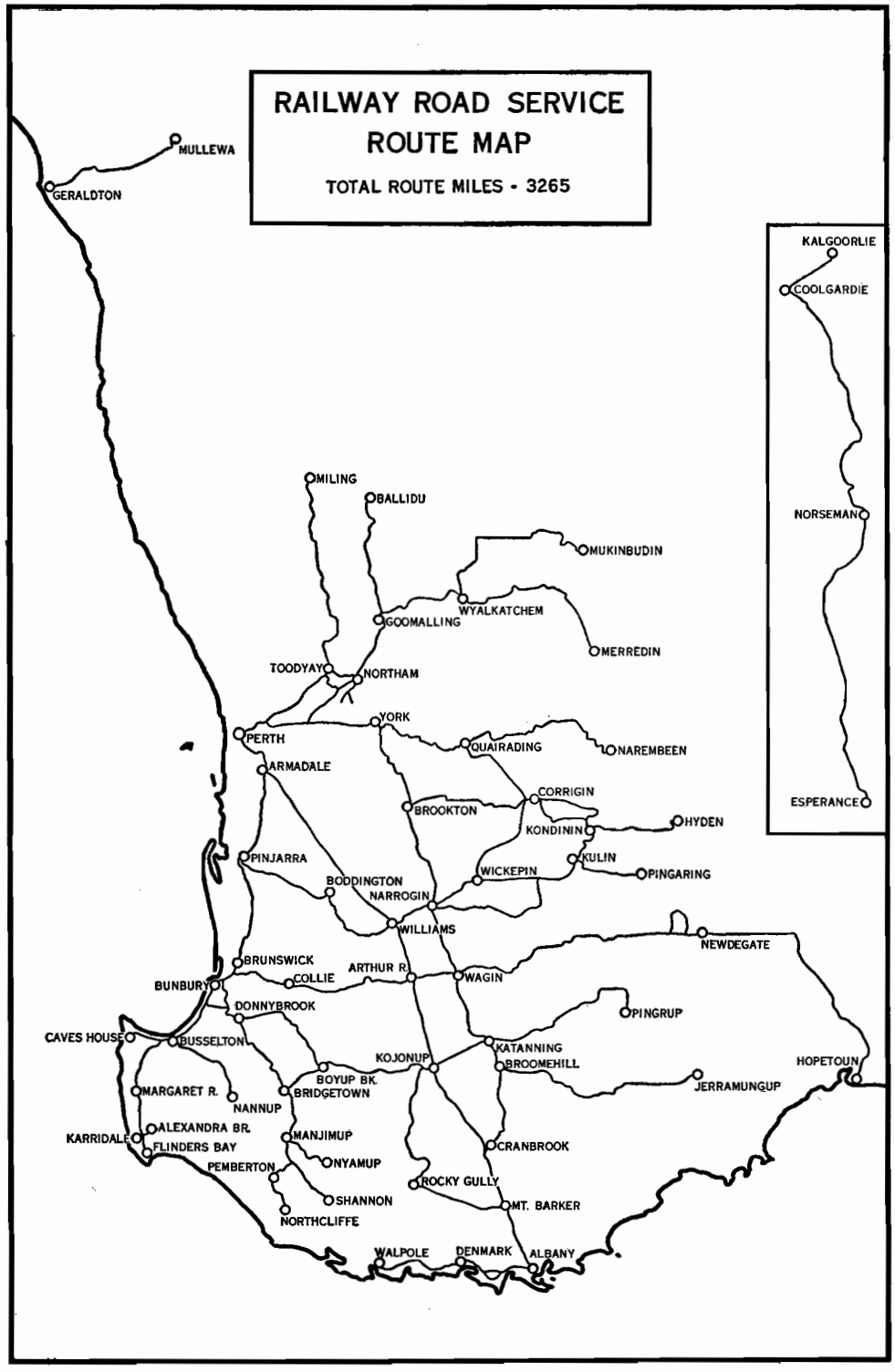
The road services operated by the Western Australian Government Railways were introduced in November, 1941 when, under the stress of wartime conditions, great difficulty was being experienced in the transport of essential goods, and it was therefore decided to transfer some of the passenger traffic from rail to road. This enabled a greater concentration of locomotive power on goods traffic and the haulage of heavier loads than were possible with mixed passenger and goods trains. Congestion on overloaded sections of railway was reduced and greater flexibility in train schedules resulted in more effective use of locomotives and wagons. Another advantage was the reduction in travelling time between points served by road vehicles.

The road passenger services expanded considerably after the war, reaching a peak in 1952–53, when 636,171 passengers were carried and the mileage travelled was 2,125,564. Since that year operations have shown a general decline partly attributable to the improvement in country rail services by the increased use of diesel-electric traction.

In 1946, the Midland Railway Company inaugurated a road passenger service from Perth to Moora and Geraldton. A road freight service for the carriage of urgent parcels, perishables and goods was introduced in 1948.

Some of the omnibuses employed in road services are dual-purpose vehicles equipped with a freight compartment, but vehicles used solely for the transport of goods are also in operation.

The following table gives a summary of the activities of the Western Australian Government Railways Road Services, together with financial results, in each year from 1957–58 to 1961–62.



WESTERN AUSTRALIAN GOVERNMENT RAILWAYS ROAD SERVICES
ROUTES IN OPERATION—JULY, 1962

WESTERN AUSTRALIAN GOVERNMENT RAILWAYS ROAD SERVICES

Particulars	Year ended 30th June: 1958	1959	1960	1961	1962
Number of—					
Route Miles Operated	2,709	2,822	3,012	3,013	3,265
Omnibuses at 30th June	51	51	49	49	51
Miles Run	1,371,695	1,291,157	1,328,167	1,514,202	1,556,109
Passengers Carried	277,943	261,874	260,625	266,233	260,972
Employees at 30th June	122	125	124	159	165
Operating Revenues—	£	£	£	£	£
Passenger Fares	134,486	129,421	131,726	146,906	165,848
Parcels and Mails	39,978	40,736	44,573	48,304	50,440
Goods	12,555	13,713	15,287	25,368	38,119
Total Operating Revenues	187,019	183,870	191,586	220,578	254,407
Operating Expenses	190,423	177,848	181,426	208,896	203,341
Excess of—					
Operating Revenues over Expenses		6,022	10,160	11,682	51,066
Operating Expenses over Revenues	3,404				
Depreciation	2,011	3,386	6,927	10,063	14,617
Interest Charges	2,478	2,721	3,290	3,670	5,427
Deficit	7,893	85	57	2,051	
Surplus					31,022

The following table deals with the operations of the Midland Railway Company's road service during the period from 1957–58 to 1961–62. Financial details relating to the service are not available for publication.

PRIVATE RAILWAY ROAD SERVICES (*a*)

Particulars	Year ended 30th June: 1958	1959	1960	1961	1962
Number of—					
Route Miles Operated	312	312	312	312	312
Omnibuses at 30th June	6	7	6	6	7
Miles Run	311,025	304,926	311,018	312,959	293,881
Passengers Carried	25,915	23,993	22,812	22,698	23,257
Employees at 30th June	25	23	21	21	21

(*a*) See letterpress *Private Railways* on page 353.

Timber Railways

At the 30th June, 1962, thirteen private railways were open for the haulage of timber. Twelve of these were owned by timber companies and the remaining line by a mining company for use in the transport of mining timber. The four lines formerly operated by the Government in connexion with the sawmill activities of the State Building Supplies and the Western Australian Government Railways passed to private ownership from the 30th June, 1961.

TIMBER RAILWAYS

Particulars	Year ended 30th June: 1958	1959	1960	1961	1962
GOVERNMENT (*a*)					
Number of—					
Lines Open at 30th June	4	4	4	4	
Route Miles Operated	122	*124	127	124	
Locomotives at 30th June	8	7	10	10	
Train Miles Run	87,792	92,491	95,239	94,134	
Employees at 30th June	62	59	78	64	
Tonnage of Timber and Other Goods Carried	129,829	135,687	*124,703	127,570	
PRIVATE					
Number of—					
Lines Open at 30th June	11	11	11	9	13
Route Miles Operated	298	298	240	192	281
Locomotives at 30th June	16	17	19	13	20
Train Miles Run	98,350	92,001	72,881	43,325	121,010
Employees at 30th June	88	80	65	55	100
Tonnage of Timber and Other Goods Carried	178,059	179,988	183,793	128,756	267,467

(*a*) See letterpress immediately preceding table. * Revised.

Railway Gauges

The gauge used in Western Australia on all railways open for general and passenger traffic is 3 ft. 6 in. Of the total route mileage of government railways in Australia at the 30th June, 1962, almost one-half (12,126 miles) was of this gauge. There were 7,663 miles of the standard 4 ft. 8½ in. gauge and 5,729 miles of 5 ft. 3 in. gauge.

The following table shows the route mileage of government railways of each gauge in each of the Australian States and Territories at the 30th June, 1962.

GOVERNMENT RAILWAYS IN EACH STATE AND TERRITORY OF AUSTRALIA
30th JUNE, 1962

State or Territory	Route Miles of Gauge :—					Total Route Miles
	5 ft. 3 in.	4 ft. 8½ in.	3 ft. 6 in.	2 ft. 6 in.	2 ft. 0 in.	
State Systems in—						
New South Wales	(a) 241	6,063				6,304
Victoria	3,815	201		34		4,050
Queensland		(a) 69	5,978		30	6,077
South Australia	1,673		859			2,532
Western Australia			3,851			3,851
Tasmania			516			516
Commonwealth Systems in—						
South Australia		871	432			1,303
Western Australia		454				454
Northern Territory			490			490
Australian Capital Territory		5				5
Total Route Miles	5,729	7,663	12,126	34	30	25,582

(a) See following letterpress *Operations of Government Railways in Australia.*

Standardization of gauges on main trunk routes throughout Australia and on some other lines has been the subject of inquiries by the Commonwealth Government and of agreements between the Commonwealth and some States. The principle of standardization was accepted at a Premiers' Conference in August, 1945 following an investigation instituted by the Commonwealth Government in March, 1944 and the submission of a favourable report in March, 1945. The use of the 4 ft. 8½ in. gauge was recommended for adoption in a unification plan, one of the projects in which was to be the construction of a line from the port of Fremantle through Perth to Kalgoorlie. Approval was given to the making of a survey for a route, and field work began in October, 1945. The work was continued until December, 1947, when it was abandoned pending agreement between the Governments of the Commonwealth and the State on the provision of finance for the unification scheme. In the years immediately following the second World War it became apparent that considerable expenditure would be necessary on the rehabilitation of the Western Australian Government Railways. The urgency and the magnitude of this undertaking were such that all the Department's available resources of money, labour and materials were absorbed in the programme and, in these circumstances, works associated with the unification plan could not be contemplated but, where possible, works connected with the restoration of the 3 ft. 6 in. system were so designed as to make provision for later conversion to the standard gauge.

In March, 1956, a committee consisting of members of the Federal Parliament was appointed to re-examine the matter of standardization. Among its recommendations, submitted in October, 1956, was the provision of the standard gauge line between Fremantle and Kalgoorlie, but no immediate action was taken to carry out this work.

During the 1960 session, the Western Australian Parliament passed the Broken Hill Proprietary Company's Integrated Steel Works Agreement Act ratifying an agreement between the Government and the Company relating to the establishment of an integrated iron and steel industry at Kwinana on the coast south of Fremantle. The Act makes the operation of the agreement contingent upon the passage of legislation by the State and Commonwealth Parliaments to provide for the financing, construction and completion before the 31st December, 1968 of a standard gauge railway between the works site at Kwinana and the terminus of the Trans-Australian Railway at Kalgoorlie. Accordingly the Commonwealth Parliament passed the Railway Agreement (Western Australia) Act 1961 extending to the State financial assistance for the project. The State Parliament approved this agreement by the

Railway Standardisation Agreement Act, 1961 and gave authority for the construction of the railway by means of the Railways (Standard Gauge) Construction Act, 1961. Work on route surveys was begun in 1961 and the construction of earthworks commenced on the 5th November, 1962.

Operations of Government Railways in Australia

The following table gives a summary of operations during the year ended 30th June, 1962 on each of the railway systems owned by State Governments and on that of the Commonwealth Government.

It will be noted that particulars of route miles shown for the New South Wales and Victorian systems differ from the details given for those States in the previous table, which is compiled according to the State or Territory in which the several lengths of line are situated. The Victorian system includes lines extending into New South Wales, the aggregate length of such lines in New South Wales being 241 miles.

A Uniform Gauge Railway of 4 ft. 8½ in. and 181 route miles in length between Grafton (New South Wales) and South Brisbane (Queensland) was completed in 1930. This line is operated by the New South Wales Railways, and details of operations on the New South Wales section (112 route miles) are included with those of the New South Wales system and particulars for the Queensland section (69 route miles) with those for the Queensland system.

GOVERNMENT RAILWAYS OF AUSTRALIA—SUMMARY OF OPERATIONS, 1961-62

Railway System of :—	Route Mileage at 30th June	Revenue Train Miles Run ('000)	Passenger Journeys ('000)	Goods and Livestock Carried ('000 tons)	Gross Earnings (£'000)	Working Expenses (£'000)	Average Number of Employees
New South Wales	6,063	37,446	234,638	24,050	88,351	79,595	50,074
Victoria	4,291	18,903	152,768	10,350	42,557	42,906	29,946
Queensland	6,077	17,563	26,700	8,153	36,159	38,085	27,635
South Australia	2,532	6,737	15,176	4,616	13,924	(a) 15,603	9,867
Western Australia	3,851	8,065	11,906	5,342	17,549	(a) 17,454	12,165
Tasmania	516	1,415	1,816	1,096	2,703	(a) 3,439	2,490
Commonwealth	2,252	2,453	315	1,958	6,241	5,165	2,861
Australia	25,582	92,582	443,319	55,565	207,484	202,247	135,038

(a) Includes provision of reserves for depreciation.

ROADS AND ROAD TRAFFIC

Work connected with road construction and maintenance and associated projects in Western Australia is undertaken by the State Government, through the Main Roads Department, and by local government authorities, comprising City Councils, Town Councils and Shire Councils.

Under the provisions of the Main Roads Act, the Main Roads Department was established in 1930 to replace the Main Roads Board originally constituted as a central road authority in 1926. The Department operates under the Main Roads Act, 1930–1961 and is administered by a Commissioner of Main Roads responsible to the Minister for Works. The Act makes provision for public roads in the categories of " main " roads, " controlled-access " roads and " developmental " roads. An additional category, that of " important secondary " roads, is used by the Department in determining its works programme.

Main roads are those which provide communication between a large producing area, either actual or potential, and its market or nearest port or railway station ; between two or more such areas ; between large centres of population ; or between the capital city and a large producing area or a large centre of population. Controlled-access roads are those which do not permit direct access from abutting property and may be entered or departed from only at certain selected road connexions located at points which are considered to serve best the traffic for which the controlled-access road was designed. Developmental roads are those which serve to develop an area or to increase its development. Important secondary roads are those which, though originally classified as developmental, have come to be used consistently by through traffic and therefore warrant a special allocation of funds by the Main Roads Department. The Act provides that, on the recommendation of the Commissioner, any road may be proclaimed a main road and any main road may cease to be a main road.

The construction and maintenance of main roads and controlled-access roads are the responsibility of the Main Roads Department. The Department also makes substantial financial provision for the construction and maintenance of important secondary roads and for the construction of developmental roads. The construction and maintenance of strategic roads and roads of access to Commonwealth property is undertaken by the Department for the Commonwealth Government.

Within its own district, each local government authority is responsible for the provision and upkeep of roads other than those provided by the Main Roads Department. In addition, the local authority is required by the Main Roads Act to maintain any developmental road situated in its district.

The following table shows the length of public roads of each type of surface, and of unsurfaced public roads, at the 30th June, 1962, classified according to Statistical Division (see map of Western Australia preceding Index). Included in the total are 3,466 miles of main roads, 5 miles of controlled-access road, 7,538 miles of important secondary roads and 23,197 miles of developmental roads.

ROADS OPEN FOR GENERAL TRAFFIC AT 30th JUNE, 1962
MILEAGE CLASSIFIED ACCORDING TO STATISTICAL DIVISION

Statistical Division	Surfaced			Unsurfaced			Grand Total
	Bitumen (a)	Gravel and Other Surfaces	Total	Formed (b)	Unformed (c)	Total	
Metropolitan (d)	1,645	105	1,750	4	64	68	1,818
Swan (d)	1,199	627	1,826	261	(e) 316	(e) 577	(e) 2,403
South-West	1,572	3,119	4,691	1,861	1,878	3,739	8,430
Southern Agricultural	1,171	3,035	4,206	6,846	2,370	9,216	13,422
Central Agricultural	2,049	5,894	7,943	9,662	(e) 3,757	(e) 13,419	(e) 21,362
Northern Agricultural	1,131	3,802	4,933	6,435	4,099	10,534	15,467
Eastern Goldfields	720	1,761	2,481	4,173	(e) 3,807	(e) 7,980	(e) 10,461
Central	45	758	803	5,419	(e) 2,710	(e) 8,129	(e) 8,932
North-West	149	94	243	2,499	(e) 2,324	(e) 4,823	(e) 5,066
Pilbara	71	169	240	2,343	(e) 387	(e) 2,730	(e) 2,970
Kimberley	98	752	850	1,761	1,305	3,066	3,916
Total	9,850	20,116	29,966	41,264	(e) 23,017	(e) 64,281	(e) 94,247

(a) Includes short lengths of concrete surface aggregating 4 miles, 62 chains. (b) Comprises roads, mainly of natural surfaces, formed but not metalled or otherwise prepared. (c) Roads unprepared except for certain clearing (d) The whole of the Shire of Swan-Guildford has been included in the figures shown for the Swan Statistical Division although part of the area, for which separate details are not available, is in the Metropolitan Statistical Division. (e) Particulars are incomplete as information for some Shires is not available.

Vehicle Registration, Licences and Traffic Control

The Traffic Act, 1919–1963 provides for the registration of vehicles, the issue of licences and the regulation of traffic throughout the State, and prescribes the fees payable in respect of the several types of licences required.

In Western Australia there is no single authority responsible for the licensing of vehicles. The Traffic Branch of the Police Department issues licences in the Metropolitan Traffic Area, which comprises the whole of the Metropolitan Statistical Division (see map of Western Australia preceding Index) and that part of the Swan Division consisting of the Shires of Cockburn, Gosnells, Kwinana and Rockingham in their entirety and parts of the Shires of Armadale-Kelmscott, Mundaring and Swan-Guildford. Outside the Metropolitan Traffic Area each local government authority is responsible for the licensing of vehicles in its own district.

The Traffic Act provides that the issue of drivers' and riders' licences and used car dealers' licences throughout the State shall be the function of the Police Department.

The table on page 359 includes particulars of the number of motor vehicles, classified according to type, on the register at the 30th June in each of the years from 1958 to 1962. It also shows the net amounts collected from motor vehicle registrations and fees in the Metropolitan Traffic Area and in the rest of the State, as well as revenue from drivers', riders' and similar licences and fees throughout the State. Vehicles owned by the Commonwealth Government are not licensed under the Traffic Act and are excluded from the figures shown. At the 31st December, 1962 there were in Western Australia 1,251 Commonwealth-owned vehicles (excluding those of the Defence Services), comprising 213 motor cars, 1,018 utilities, vans and trucks, 13 omnibuses and 7 motor cycles.

Traffic control in general is exercised by the Police Department in the Metropolitan Traffic Area, except for certain powers in relation to the parking of vehicles conferred on the Perth City Council by the City of Perth Parking Facilities Act, 1956-1961. Outside the Metropolitan Traffic Area, control is vested by the Traffic Act in the local government authorities, each of which is required by the Act to appoint at least one traffic inspector for its district.

MOTOR VEHICLES ON REGISTER (‡) AND NET FEES RECEIVED

Particulars		Year ended 30th June:				
		1958	1959	1960	1961	1962
METROPOLITAN TRAFFIC AREA (*a*)						
Number on Register at end of Year (*b*)—						
Motor Cars (including Station Wagons)		71,057	77,320	84,262	92,412	101,880
Utilities, Vans, Trucks and Omnibuses		23,371	24,654	25,636	26,491	27,516
Motor Cycles		8,761	8,812	8,844	8,776	8,735
Total		103,189	110,786	118,742	127,679	138,131
Revenue from Registrations and Fees (*c*)....	£	1,042,525	1,091,825	1,281,991	1,467,161	1,584,469
REST OF STATE						
Number on Register at end of Year (*b*)—						
Motor Cars (including Station Wagons)		40,666	42,539	46,102	49,072	53,406
Utilities, Vans, Trucks and Omnibuses		39,373	40,003	42,059	43,475	45,660
Motor Cycles		3,864	4,001	4,031	3,811	3,651
Total		83,903	86,543	92,192	96,358	102,717
Revenue from Registrations and Fees (*c*)	£	960,359	1,030,091	1,169,379	1,243,914	1,314,196
WHOLE STATE						
Number on Register at end of Year (*b*)—						
Motor Cars (including Station Wagons)		111,723	119,859	130,364	141,484	155,286
Utilities, Vans, Trucks and Omnibuses		62,744	64,657	67,695	69,966	73,176
Motor Cycles		12,625	12,813	12,875	12,587	12,386
Total		187,092	197,329	210,934	224,037	240,848
Revenue from—						
Motor Vehicle Registrations and Fees (*c*)	£	2,002,884	2,121,916	2,451,370	2,711,075	2,898,665
Drivers', Riders', etc., Licences and Fees	£	128,814	137,562	182,021	282,445	291,437

(‡) Figures have been adjusted to conform to the results of the Censuses of Motor Vehicles as at 31st December, 1955 and 31st December, 1962. (*a*) Comprises the Metropolitan Statistical Division and part of the Swan Statistical Division (see letterpress *Vehicle Registration, Licences and Traffic Control*). (*b*) Excludes vehicles owned by the Commonwealth Government. Excludes also such vehicles as tractors, trailers and industrial (on site) equipment. (*c*) Excludes fees for number plates.

Finance for Roads (1)

The principal source of revenue for road works in Western Australia is in the form of Commonwealth financial assistance authorized by a series of Acts, the first of which, the Main Roads Development Act, was passed in 1923.

The Commonwealth Aid Roads Act of 1954 repealed earlier legislation and provided for distribution among the States, for a period of five years from the 1st July, 1954, of part of the moneys derived from customs and excise duties on petrol. Five per cent. of the total grant was payable to the State of Tasmania, the balance to be distributed among the other States on the basis of three-fifths according to population and two-fifths according to area. The Act required that not less than two-fifths of the moneys paid to a State in any year should be spent on the construction and maintenance of rural roads or on the purchase of plant for use in connexion with rural roads, which it defined as " roads in rural areas other than highways, trunk roads and main roads ". Additional payments to the States for each of the years 1957–58 and 1958–59 were authorized by a Commonwealth Aid Roads (Special Assistance) Act passed in 1957. With the expiry of these Acts in 1959, they were replaced by a new Commonwealth Aid Roads Act (No. 39 of 1959) with a currency of five years from the 1st July, 1959. (See also *Appendix*). By its provisions the funds available for distribution among the States cease to be related to taxation on petrol. They take the form of a basic grant aggregating £220 million for the five-year period, with an additional grant of £30 million. The basic grant increases uniformly from £40 million in the first year to £48 million in the fifth year and, after payment to Tasmania of five per cent. of the total in each year, the balance is allocated among the other States in the proportion of one-third according to population, one-third according to area and one-third according to the number of motor vehicles registered. The

(1) See *Appendix*.

additional grant, increasing from £2 million in 1959–60 to £10 million in 1963–64, is a conditional one dependent on a State's expenditure on roads from its own resources. Where this expenditure in any year exceeds the corresponding amount spent in 1958–59, the State is entitled to receive a grant equal to the amount of the excess, or its quota of the total additional grant for the year, whichever is the less. The quota of the additional grant is determined on the same principle as that used in allocating the basic grant.

The receipt and distribution of State moneys for roads and associated works are dealt with in a number of accounts, among the more important of which are the Metropolitan Traffic Trust Account and the Central Road Trust Fund.

Before the Central Road Trust Fund was established by an amendment to the Traffic Act in 1959, all receipts from vehicle licence fees in the Metropolitan Traffic Area were paid to the Metropolitan Traffic Trust Account, while the local government authorities outside the Metropolitan Traffic Area retained the whole of their collections from this source. Income from drivers' and riders' licences throughout the State was formerly credited to the Consolidated Revenue Fund.

A Central Road Trust Fund account was opened at the Treasury on the 1st January, 1960, to record transactions in connexion with the additional grant provided for in the Commonwealth Aid Roads Act of 1959. The State moneys required to be paid into the Fund comprise metropolitan collections of vehicle licence fees in excess of the amount received in 1958–59 (£1,093,895), and revenue throughout the State from drivers' and riders' licences. Other revenues accruing to the Fund are those derived from local government authorities outside the Metropolitan Traffic Area, which may elect to contribute the amount of their collections of vehicle licence fees in excess of such receipts in 1958–59, as well as the State's quota of the additional grant from the Commonwealth.

The Central Road Trust Fund is administered by the Commissioner of Main Roads who is required to make certain payments from the Fund after the 30th June in each year. A contributing local authority outside the Metropolitan Traffic Area is entitled under the Act to receive a payment 50 per cent. greater than the amount of its contribution. The metropolitan local authorities share, in proportions determined by the Minister, an amount equal to three-quarters of the total sum paid to the credit of the Fund by the Commissioner of Police as the metropolitan vehicle-licensing authority. It is provided that the total disbursements to local government authorities from the Fund shall not in any year exceed twice the amount of the additional grant received from the Commonwealth for that year, and that moneys so paid must be spent by the local authorities on roads, road-making plant or research in connexion with road construction.

The revenue of the Metropolitan Traffic Trust Account consists of the amount received from vehicle licence fees in the Metropolitan Traffic Area, except for that portion which is required to be paid to the Central Road Trust Fund. The Act provides that, after payment of an annual charge of £120,000 for the costs of collection and administration, one-half of the net balance shall be shared by local government authorities in the Metropolitan Traffic Area in proportions determined by the Minister, and the remaining half paid to the Commissioner of Main Roads to be applied to the performance of specified works and services associated with road construction and maintenance and allied projects.

Other State moneys used for road purposes are the contributions paid to the Main Roads Trust Account by the Department of Transport to meet the cost of maintaining and improving roads used by omnibuses and commercial vehicles licensed by the Department.

Local government expenditure on roads is financed from a number of sources. These comprise vehicle licence fees, Commonwealth and State moneys received by way of disbursements made by the Commissioner of Main Roads, amounts levied in the form of general rates, and the proceeds of local government loans raised for road purposes.

Reference is made on pages 22 and 28 to Commonwealth financial assistance provided under the terms of the Western Australia Grant (Beef Cattle Roads) Acts of 1961 and 1962.

ROAD PASSENGER TRANSPORT SERVICES

Motor omnibus, trolley-bus and passenger ferry services in the metropolitan area are operated by the Metropolitan (Perth) Passenger Transport Trust, constituted under the Metropolitan (Perth) Passenger Transport Trust Act, 1957–1961. For the purposes of the Act, the metropolitan area is defined by a proclamation of the 1st May, 1958 as being " all the land within a circle having a radius of 30 miles from the Perth Town Hall " and, in addition, an area bounded by the South Western Highway and the ocean, extending southward to an east-west line one mile south of the town of Pinjarra. It thus embraces an

area comprising the whole of the Metropolitan Statistical Division, almost all of the Swan Statistical Division and a small area of each of the three adjoining Divisions (see map of Western Australia preceding Index).

The Trust began transport operations on the 1st September, 1958 after having acquired two privately-owned omnibus services. Three more such services were taken over before the end of 1958 and another early in 1959. From the 1st July, 1960 the Trust assumed control of the trolley-bus, motor omnibus and ferry services formerly operated by the Western Australian Government Tramways and Ferries Department and, from the 1st September, 1960, the omnibus service of the Fremantle Municipal Transport Board. The Trust's programme of acquisition of metropolitan road passenger transport services and ferry services was completed on the 29th April, 1962.

Road transport outside the metropolitan area is provided by the railways road services (see pages 353–5), which cover long-distance routes between Perth and country centres; by the Eastern Goldfields Transport Board, which serves the Kalgoorlie-Boulder urban area under an agreement with the Kalgoorlie and Boulder Town Councils and the Kalgoorlie Shire Council; and by privately-owned omnibus services, which operate mainly in and around country centres.

Reference is made on page 143 to the transport of children to and from school in country areas. In 1962 the cost to the Government of school transport services was £1,021,732. The number of omnibuses engaged was 631. They travelled a daily total of 41,260 miles and carried 20,682 children daily.

The figures in the following table include the operations of trolley-buses, but exclude school transport services, tourist services and charter operations.

OMNIBUS SERVICES

Particulars	Year ended 30th June: 1959	1960	1961	1962
METROPOLITAN SERVICES (*a*)				
Number of—				
Route Miles Operated	(*b*)	(*b*)	(*b*)	557
Omnibuses at 30th June (*c*)	564	544	555	562
Miles Run	17,929,924	17,062,273	16,452,316	16,289,946
Passengers Carried	59,794,876	56,659,398	52,248,887	52,218,294
Employees at 30th June	1,683	1,651	1,586	1,539
	£	£	£	£
Operating Revenue	2,510,491	2,470,198	2,410,872	2,406,381
Operating Expenses	2,844,954	2,873,123	2,855,024	2,565,993
Depreciation				182,117
Interest				167,932
OTHER SERVICES (*d*)				
Number of—				
Route Miles Operated	(*b*)	(*b*)	(*b*)	4,529
Omnibuses at 30th June	129	118	120	115
Miles Run	2,594,794	2,595,390	2,867,796	2,909,247
Passengers Carried	2,962,902	2,883,197	2,886,663	3,187,114
Employees at 30th June	225	213	259	264
	£	£	£	£
Operating Revenue	341,439	354,912	391,084	421,740
Operating Expenses	345,089	354,116	396,938	361,663
Depreciation				28,765
Interest				6,367
TOTAL				
Number of—				
Route Miles Operated	(*b*)	(*b*)	(*b*)	5,086
Omnibuses at 30th June (*c*)	693	662	675	677
Miles Run	20,524,718	19,657,663	19,320,112	19,199,193
Passengers Carried	62,757,778	59,542,595	55,135,550	55,405,408
Employees at 30th June	1,908	1,864	1,845	1,803
	£	£	£	£
Operating Revenue	2,851,930	2,825,110	2,801,956	2,828,121
Operating Expenses	3,190,043	3,227,239	3,251,962	2,927,656
Depreciation				210,882
Interest				174,299

(*a*) Services operating wholly within the Metropolitan Statistical Division and its environs. (*b*) Not available.
(*c*) Includes trolley-buses. (*d*) Includes some services with a metropolitan terminus.

PASSENGER FERRY SERVICE

The Metropolitan (Perth) Passenger Transport Trust operates a passenger ferry service across the Swan River from Perth to South Perth. Particulars of private charter excursions are excluded from the figures in the following table, which therefore relates only to the regular transport of passengers.

PASSENGER FERRY SERVICE

Particulars	Year ended 30th June: 1958	1959	1960	1961	1962
Number of—					
Boats at 30th June	4	4	4	4	4
Miles Run	25,701	25,646	24,687	21,500	22,293
Passengers Carried	442,259	407,276	362,316	179,851	167,521
Employees at 30th June	11	11	7	7	8
	£	£	£	£	£
Operating Revenues	13,520	13,504	12,219	9,211	9,889
Operating Expenses	15,868	15,119	14,466	11,303	11,696
Depreciation	1,019	1,018	1,018	1,004	724
Interest	352	312	271	(a)	(a)

(a) Not available.

STATISTICAL SUMMARY OF RAIL, OMNIBUS AND FERRY SERVICES

The following table, which is based on figures some of which are already shown in tables on the preceding pages, is designed to give a convenient summary of the operations of the several services during 1961–62 and to provide some significant totals for the services as a whole.

RAIL, OMNIBUS AND FERRY SERVICES—SUMMARY FOR 1961–62

Service	Route Miles	Miles Run	Employees at end of Year	Operating Revenues	Operating Expenses	Passengers Carried: Metropolitan	Passengers Carried: Other
				£	£		
Railways—							
Government (a)	3,851	8,065,240	12,122	17,549,402	15,559,915	11,308,030	598,065
Private (b)	277	303,164	456	964,045	684,727		4,087
Total	4,128	8,368,404	12,578	18,513,447	16,244,642	11,308,030	602,152
Railways Road Services—							
Government	3,265	1,556,109	165	254,407	203,341		260,972
Private	312	293,881	21	(c)	(c)		23,257
Total	3,577	1,849,990	186	(d)	(d)		284,229
Metropolitan (Perth) Passenger Transport Trust—							
Omnibuses (e)	509	14,284,806	1,538	2,159,397	2,336,595	46,911,567	
Ferries	1	22,293	8	9,889	11,696	167,521	
Total	510	14,307,099	1,546	2,169,286	2,348,291	47,079,088	
Eastern Goldfields Transport Board (f)	18	260,005	18	32,390	32,336		964,890
Private Omnibus Services (g)	982	2,804,392	61	381,927	355,384	5,306,727	1,937,995
GRAND TOTAL	9,215	27,589,890	14,389	21,351,457	19,183,994	63,693,845	3,789,266

(a) Excluding Western Australian Government Railways Road Services. Excludes also operations in Western Australia of Commonwealth Government Railways. (b) Excluding timber railways. (c) Not available separately for publication; included in "Private Omnibus Services". (d) Not available; see note (c). (e) Includes trolley-buses. (f) Motor omnibus service. (g) Excluding private railway road services, except for figures shown under "Operating Revenues" and "Operating Expenses".

ROAD TRAFFIC ACCIDENTS

Statistics of road traffic accidents are prepared from information contained in reports submitted by the police, or by traffic inspectors employed by local government authorities outside the Metropolitan Traffic Area. Accidents involving casualties are those which result in the death of any person within a period of 30 days after the accident, or in which any person suffers bodily injury to an extent requiring surgical or medical treatment.

The following table shows, for each year during the period from 1957–58 to 1961–62, the number of accidents involving casualties which occurred in Western Australia and in Australia (excluding the Northern Territory, for which particulars are not available for years prior to 1962–63). Casualty rates per 100,000 of mean population are also shown. It will be seen that the casualty rates experienced in Western Australia were higher than the corresponding Australian rates in each year.

ROAD TRAFFIC ACCIDENTS AND CASUALTIES
WESTERN AUSTRALIA AND AUSTRALIA (*a*)

Particulars	Year ended 30th June:				
	1958	1959	1960	1961	1962
WESTERN AUSTRALIA					
Accidents involving Casualties	3,338	3,450	3,656	3,602	3,571
Number of Persons Killed—					
Total	164	178	180	197	187
Per 100,000 of Mean Population	24	25	25	27	25
Number of Persons Injured—					
Total	4,249	4,506	4,788	4,806	4,856
Per 100,000 of Mean Population	613	638	667	659	651
AUSTRALIA (*a*)					
Accidents involving Casualties	41,170	41,766	44,919	45,052	43,783
Number of Persons Killed—					
Total	2,147	2,264	2,468	2,542	2,491
Per 100,000 of Mean Population	22	23	24	25	24
Number of Persons Injured—					
Total	54,193	55,359	60,104	60,749	58,524
Per 100,000 of Mean Population	557	558	593	586	553

(*a*) Excluding Northern Territory, for which particulars are not available for years prior to 1962–63.

In the next table road traffic accident casualties which occurred in Western Australia during the five years ended 30th June, 1962 are classified according to type of road user. The figures shown in the category " Other " refer to such persons as riders of horses and drivers of animal-drawn vehicles.

ROAD TRAFFIC ACCIDENTS—CASUALTIES ACCORDING TO TYPE OF ROAD USER

Type of Road User	Year ended 30th June:				
	1958	1959	1960	1961	1962
PERSONS KILLED					
Drivers of Motor Vehicles	36	41	48	64	66
Motor Cyclists	25	15	21	10	17
Pedal Cyclists	13	12	6	15	8
Passengers :					
Pillion	4	3	7	2	1
Other	38	51	50	47	59
Pedestrians	48	56	47	59	36
Other			1		
Total	164	178	180	197	187
PERSONS INJURED					
Drivers of Motor Vehicles	973	1,128	1,280	1,363	1,458
Motor Cyclists	703	730	807	718	642
Pedal Cyclists	404	401	412	346	360
Passengers :					
Pillion	156	150	228	167	157
Other	1,329	1,454	1,438	1,648	1,711
Pedestrians	679	638	623	562	524
Other	5	5		2	4
Total	4,249	4,506	4,788	4,806	4,856

The following table gives a classification of casualties according to the ages of persons killed and persons injured during each year of the period from 1957–58 to 1961–62.

ROAD TRAFFIC ACCIDENTS—CASUALTIES CLASSIFIED ACCORDING TO AGE

Year ended 30th June :	Age last birthday (years)										Total
	0–4	5–6	7–16	17–20	21–29	30–39	40–49	50–59	60 and over	Not stated	
PERSONS KILLED											
1958	5	5	13	22	28	29	14	12	36		164
1959	9	6	19	17	18	30	21	18	40		178
1960	6	2	15	29	26	20	27	12	43		180
1961	8	6	16	22	36	20	20	20	49		197
1962	6	4	13	32	26	25	20	24	36	1	187
PERSONS INJURED											
1958	158	85	548	742	743	493	389	280	266	545	4,249
1959	151	100	587	851	802	581	392	360	280	402	4,506
1960	160	115	645	1,039	895	522	421	364	302	325	4,788
1961	220	116	633	1,080	858	570	424	362	342	201	4,806
1962	196	114	693	1,033	925	567	411	349	311	257	4,856

Road traffic accidents during the years ended 30th June, 1961 and 1962 are classified in the next table according to type of accident and type of vehicle involved. It should be noted that, as accidents and casualties may involve more than one type of vehicle and, in such cases, are classified to each type involved, totals cannot be derived by adding the figures in the second part of the table.

ROAD TRAFFIC ACCIDENTS
TYPE OF ACCIDENT AND TYPE OF VEHICLE INVOLVED

Type of Accident and Type of Vehicle Involved	Year ended 30th June :					
	1961			1962		
	Accidents involving Casualties	Casualties		Accidents involving Casualties	Casualties	
		Persons Killed	Persons Injured		Persons Killed	Persons Injured
TYPE OF ACCIDENT						
Vehicle Colliding with—						
Moving Vehicle	1,794	62	2,550	1,756	76	2,502
Pedestrian	594	59	567	521	35	520
Stationary Vehicle	102	2	140	91	1	136
Other Fixed Object	19	1	25	22		26
Animal	38	1	49	45		53
Vehicle Overturning or Leaving Road	998	69	1,412	1,061	68	1,545
Passenger Accident	49	1	55	66	6	65
Other	8	2	8	9	1	9
Total	3,602	197	4,806	3,571	187	4,856
TYPE OF VEHICLE INVOLVED (*a*)						
Motor Vehicle, excluding Motor Cycle	3,209	189	4,348	3,230	174	4,466
Motor Cycle	834	14	986	352	7	412
Motor Scooter				387	12	444
Pedal Cycle	373	15	372	380	8	383
Animal-drawn Vehicle	4		6	3		3

(*a*) See letterpress immediately preceding table.

Motor Vehicle Third Party Insurance

Motor vehicle third party insurance became compulsory in Western Australia under the provisions of the Motor Vehicle (Third Party Insurance) Act of 1943. All such insurances are now effected through a Motor Vehicle Insurance Trust, a summary of whose operations is given in Chapter VI—Part 2, *Private Finance*.

AIR TRANSPORT

The supervision and control of civil air transport operations throughout Australia is the responsibility of the Department of Civil Aviation. Among its functions are the enforcement of safety regulations ; the registration of aircraft and the issue of certificates of airworthiness ; the licensing of members of air crews and of ground staffs ; the provision, operation and maintenance of aeronautical communication systems and air navigation facilities ; the authorization of sites for aerodromes ; the design, operation and maintenance of aerodromes ; the establishment and operation of air traffic control services ; the specification of the requisite meteorological services ; the approval of fares, freight rates and time tables ; and the licensing of air service operations and co-operation with State Government transport licensing authorities.

An extensive system of air services operates in Western Australia for the transport of passengers, freight and mails. Perth has an international airport which is used by oversea services between Australia and the United Kingdom via Singapore and between Australia and South Africa via Cocos Island and Mauritius. Perth is also the western terminus of interstate flights connecting the capital cities of Australia and is the base for a comprehensive airline network serving many inland centres as well as coastal towns in the south, the north-west and the north of the State. From some of these towns regular services operate over many hundreds of miles of route to sheep and cattle stations and to native missions. Some stations and towns in the Kimberley are linked with Darwin and Alice Springs in the Northern Territory. (The principal air routes being flown in or through Western Australia at the 31st December, 1962 are shown on the map of the State preceding the index.) In addition to these regular services there are facilities for charter flights. Some operators engage in work connected with the Royal Flying Doctor Service.

The principal function of the Royal Flying Doctor Service of Australia is to provide medical aid, dental care and air ambulance transport for residents, including aboriginal natives, in remote areas. Isolated townships, mining centres and sheep and cattle stations are usually equipped with two-way radio sets and, by this means, are linked with bases where doctors are available for radio consultation in the event of sickness or accident. In serious cases a doctor flies to the patient, who may then be flown to hospital for treatment. The Service provides first-aid books, as well as standard medicine chests with directions for the use of the drugs and medical supplies which they contain and, where necessary, the doctor gives additional instruction by radio.

The radio network of the Royal Flying Doctor Service is regularly used in the work of Schools of the Air conducted by the Education Department, and also for the transmission and receipt of telegrams. In addition, it may be used, as the need arises, in connexion with flood relief, in searching for lost parties and in co-ordinating movements of livestock.

The Service is financed by grants from the Commonwealth and State Governments and by private donations.

TRANSPORT CO-ORDINATION

The Western Australian Transport Board was established in 1934 under the provisions of the State Transport Co-ordination Act of 1933. The Board as originally constituted was dissolved by an amendment to the Act in 1961 and its powers and functions transferred to a Commissioner of Transport assisted by a Transport Advisory Board. The Transport Advisory Board, to which the first appointments were made by the Governor on the 19th February, 1962, comprises the Commissioner of Transport as chairman and four other members, two of whom are representative of rural industries and two of city interests. The functions of the Commissioner are to investigate and make inquiries into transport matters, including transport generally as related to service to the community, the needs of the State for its economic development, the industrial conditions under which all forms of transport are conducted, and the impartial and equitable treatment of all conflicting interests ; to consider and determine all applications for licences in respect of public vehicles and the conditions to be imposed in granting such licences ; and to call tenders and invite premiums in regard to the provision of transport, where he considers it desirable to do so after receiving the advice of the Transport Advisory Board.

The public vehicles licensed by the Commissioner are omnibuses, commercial goods vehicles and aircraft. In the licensing of omnibuses the Commissioner is empowered to prescribe the routes to be operated, the fares to be charged, the time tables to be observed and the maximum number of passengers to be carried in an omnibus. The Metropolitan (Perth) Passenger Transport Trust, to which reference is made on pages 360–61, is not subject to the State Transport Co-ordination Act and exercises these powers in relation to its own services. All commercial goods vehicles are required to be licensed, except those which operate solely in the area within a radius of 20 miles from the Perth General Post Office or within a radius of 20 miles from the owner's place of business, or those which are used in certain circumstances for the transport of specified types of goods, mainly primary produce including forest products, minerals and livestock. Aircraft licences issued by the Commissioner relate to regular services and charter flights. Aircraft exempted from the licensing provisions of the Act are those operated solely in connexion with the Royal Flying Doctor Service or in the course of aerial spraying, crop dusting, seed sowing, fertilizer distribution, photography, geophysical surveying, dingo baiting or whale or fish spotting.

In regard to railways the Commissioner of Transport may, with the concurrence of the Transport Advisory Board, recommend the closure of lines or the partial suspension of services where it is considered that a district is, or could be, better served by road or air transport. The Commissioner, if so directed by the appropriate Minister, is then required to call tenders for the provision of transport facilities to serve the district. Where the Parliament sanctions the cancellation or suspension of the existing rail service, the Minister may then accept a tender, which becomes subject to conditions imposed by the Commissioner relating to the service to be provided and the period during which it shall operate.

Financial transactions are recorded in a Transport Co-ordination Fund account as required by the Act. The principal revenues of the Fund are receipts from licence and permit fees and amounts received from the Treasury for distribution in the form of subsidy to transport operators and others in certain areas. The expenditure from the Fund includes amounts necessary to meet administration costs, disbursements to the Main Roads Department and to local government authorities for the maintenance and improvement of roads, moneys required to be held in trust for the provision and maintenance of landing grounds, and the payment of subsidies. Subsidies are paid principally on the cartage of grain and fertilizers, but also on the air transport of perishable goods to places in the northern part of the State and on air travel by students normally resident in that area.

CHAPTER IX—*continued*

PART 3—COMMUNICATION

POSTS, TELEGRAPHS AND TELEPHONES

The first postmasters in the Colony of Western Australia were appointed at Perth and Fremantle in 1830 and a Postal Department was established by the Colonial Government in 1834. Telegraphic communication, between Perth and Fremantle, was inaugurated in 1869 by means of a private line, which was purchased by the Government in 1871. A telephone exchange system, installed and operated by the Government, was opened at Perth in 1887.

In 1901, following the federation of the Australian Colonies, the post, telegraph and telephone services of the State Governments were transferred to the Commonwealth Government. The Post and Telegraph Act of 1901 placed the services under the control of a Commonwealth Minister to be known as the Postmaster-General.

The following table shows the number of persons employed by, or receiving allowances from, the Postmaster-General's Department in Western Australia, and the number of post offices throughout the State at the 30th June of each of the years from 1958 to 1962. "Non-official" post offices are those conducted by persons who are not full-time employees of the Department, but are paid an allowance for their services. These offices are situated mainly in country areas and are usually established at retail stores or other places of business. "Telephone offices" are those at which only telephone and telegraph business is transacted.

POSTMASTER-GENERAL'S DEPARTMENT—EMPLOYMENT AND POST OFFICES
WESTERN AUSTRALIA

Particulars	At 30th June :				
	1958	1959	1960	1961	1962
Full-time Employees—					
Permanent Officers	4,233	4,353	4,452	4,591	4,654
Temporary and Exempt Officers (*a*)	1,333	1,397	1,269	1,143	1,163
Total	5,566	5,750	5,721	5,734	5,817
Others (*b*)—					
Non-official Postmasters and Staff	523	527	526	528	532
Telephone Office Keepers	340	332	331	323	318
Mail Contractors (*c*)	289	274	295	290	298
Part-time Employees	96	114	159	175	226
Total	1,248	1,247	1,311	1,316	1,374
Total Employment	6,814	6,997	7,032	7,050	7,191
Post Offices—					
Official	150	148	148	148	148
Non-official	486	485	486	484	486
Telephone Offices	344	341	333	326	315
Total	980	974	967	958	949

(*a*) Exempt staff are persons exempt from the provisions of the Public Service Act. (*b*) Persons employed under contract or on piece-work. (*c*) Includes persons employed to drive vehicles.

Figures relating to the revenue and expenditure of the Department in Western Australia during each of the financial years from 1957–58 to 1961–62 are given in the following table. They represent the amounts actually collected or paid in each year, as shown by records kept for Treasury purposes. Some additional items of departmental revenue and expenditure are not apportioned to States and therefore do not appear in the table.

POSTMASTER-GENERAL'S DEPARTMENT—REVENUE AND EXPENDITURE (a) WESTERN AUSTRALIA

(£'000)

Particulars	Year ended 30th June:				
	1958	1959	1960	1961 (b)	1962 (b)
REVENUE (a)					
Postage	1,902	1,924	2,338	2,570	2,682
Money Order Commission and Poundage on Postal Notes	58	53	63	68	71
Private Boxes and Bags	20	21	23	24	25
Miscellaneous	157	160	184	2	4
Total—Postal Revenue	2,137	2,158	2,608	2,664	2,782
Telegraphs	581	579	590	625	654
Telephones	3,124	3,372	4,004	4,619	4,879
GRAND TOTAL	5,842	6,109	7,202	7,908	8,315
EXPENDITURE (a)					
Expenditure from Ordinary Votes—					
Salaries and Payments in the Nature of Salary	2,579	2,642	2,935	3,023	3,136
General Expenses	291	291	307	316	341
Stores and Material	173	186	211	183	164
Mail Services	251	252	253	226	240
Engineering Services (other than New Works)	2,267	2,475	2,703	2,775	2,968
Total	5,561	5,846	6,409	6,523	6,849
Rent, Repairs and Maintenance	67	76	79	92	69
Proportion of Audit Expenses	3	3	4	4	4
Capital Works—					
Telegraph and Telephone	2,230	2,308	2,395	2,280	2,535
Buildings, Sites and Properties	250	339	187	384	297
GRAND TOTAL	8,111	8,572	9,074	9,283	9,754

(a) The figures shown as Revenue represent revenue actually collected during the year, and those shown as Expenditure, actual payments made, as recorded for Treasury purposes. (b) Figures for 1960–61 and 1961–62 are not entirely comparable with those for earlier years; from 1960–61 "Miscellaneous" Revenue has been mainly classified to the three major branches.

As the figures shown in the preceding table relate to actual collections and payments made, they do not represent the net results of the Department's operations for the year. The net results of the operations throughout Australia of each branch, for the year ended 30th June, 1962 after providing for working expenses (including depreciation, superannuation and furlough liability) and interest charges are shown in the following table. The amounts appearing under the heading of Interest represent interest on funds provided by the Treasury.

POSTMASTER-GENERAL'S DEPARTMENT—PROFIT OR LOSS (†) OF BRANCHES AUSTRALIA, 1961-62

(£'000)

Particulars	Postal	Telegraph	Telephone	All Branches
Earnings	47,310	7,513	85,383	140,206
Working Expenses	47,003	7,086	67,993	122,082
Net Earnings	307	427	17,390	18,124
Interest	684	489	18,913	20,086
Profit or Loss	—377	—62	—1,523	—1,962

(†) Minus sign (—) denotes loss.

Posts

In the following table, postal matter handled in Western Australia during each year from 1957–58 to 1961–62 is dissected according to the type of article dealt with, and whether received from overseas or posted for delivery in Australia or to an oversea destination.

POSTAL ARTICLES HANDLED

(thousands)

Particulars	Year ended 30th June: 1958	1959	1960	1961	1962
Posted for Delivery within Australia—					
Ordinary Postal Articles—					
Letter-form	97,500	99,904	97,875	105,762	110,089
Other	8,839	9,129	9,676	9,741	9,562
Parcels (*a*)	1,129	1,169	934	915	915
Registered Articles (*b*)	707	678	598	538	525
Posted for Delivery Overseas—					
Ordinary Postal Articles—					
Letter-form	5,427	5,688	5,587	6.248	6,041
Other	1,411	1,381	1,119	1,182	1,238
Parcels (*a*)	31	29	25	21	21
Registered Articles (*b*)	56	54	52	51	49
Received from Overseas—					
Ordinary Postal Articles—					
Letter-form	3,434	3,296	2,074	3,045	2,739
Other	5,910	6,582	5,759	5,829	5,076
Parcels (*a*)	45	45	46	50	51
Registered Articles (*b*)	56	44	45	30	29

(*a*) Includes registered, cash on delivery and duty parcels. (*b*) Excludes registered parcels; see note (*a*).

Telegraphs and Telephones

A brief account of the origin and extension of the telegraph system in Western Australia and of submarine cable installations is given on page 291 of the *Official Year Book of Western Australia*, 1957, *No.* 1 (*New Series*), and the main developments are treated chronologically in Chapter I of the present issue.

Oversea telegraph and telephone services are now the responsibility of the Overseas Telecommunications Commission (Australia), to which reference is made in the next section *Radio Communication*.

The following table relates to telegraph and telephone services in Western Australia in each financial year from 1957–58 to 1961–62. It shows the numbers of telegraph offices and of telephone exchanges, the volume of telegraph traffic handled and telephone services and telephones connected at the 30th June of each year.

TELEGRAPHS AND TELEPHONES

Particulars	Year ended 30th June: 1958	1959	1960	1961	1962
TELEGRAPHS					
Number of—					
Offices (*a*)	978	967	970	966	949
Telegrams and Cables—	'000	'000	'000	'000	'000
Within Australia—Dispatched	1,827	1,796	1,768	1,746	1,786
Beyond Australia—Dispatched	76	76	77	74	77
Received	68	88	73	75	75
Total	144	164	150	149	152
TELEPHONES (*a*)					
Number of—					
Exchanges	767	771	763	767	762
Services—					
Metropolitan (*b*)	52,351	55,921	58,773	61,474	66,008
Other	26,343	27,866	29,173	30,375	31,967
Total	78,694	83,787	87,946	91,849	97,975
Telephones in Service—					
Total	108,993	115,808	121,493	125,737	133,731
Per 100 of Population	15·6	16·3	16·8	17·1	17·7

(*a*) At 30th June. (*b*) Services connected to exchanges located within 10 miles of the General Post Office, Perth.

The teleprinter exchange service was introduced in Perth in December, 1956. This service enables a subscriber's teleprinter to be connected with that of any other subscriber in the local network or networks in other States.

TELEPRINTER EXCHANGE NETWORK

Particulars	Year ended 30th June :				
	1958	1959	1960	1961	1962
Number of—					
Subscribers at 30th June	19	25	40	63	82
Local Calls	25	84	551	1,398	3,454
Trunk Calls	4,719	9,543	13,616	18,192	29,595

At the 30th June, 1962, the single wire mileage of telegraph and telephone cables in Western Australia was 645,402. The single wire mileage of aerial wires was 128,008 and the mileage of pole routes was 16,153.

RADIO COMMUNICATION

The Overseas Telecommunications Commission (Australia) was established in 1946 under the provisions of the Overseas Telecommunications Act (Commonwealth) of 1946.

The Commission participates with other countries of the British Commonwealth in the maintenance and operation of a world-wide network of cable and radio circuits. The whole of Australia's international public telecommunications traffic is handled through this network, traffic being routed over cable or radio circuits, or a combination of them, according to circumstances. Radio-telephone circuits are provided by the Commission for operation, by the Postmaster-General's Department, of services with oversea countries and with ships at sea. In addition, a coastal radio service is controlled by the Commission.

The licensing of civil radio-communication stations and the transmission of radio messages within Australia are the responsibility of the Postmaster-General's Department. The Royal Flying Doctor Service of Australia, to which reference is made in the section *Air Transport* in Part 2 of this Chapter, provides general telegraph facilities in remote areas through its extensive radio network.

The numbers of each type of radio-communication station authorized to operate in Western Australia at the 30th June, 1962 are given in the next table. The following definitions are relevant in considering the figures shown in the table. *Fixed Stations*—Stations established at fixed locations for communications with other stations similarly established. *Outposts*—Stations established in outback areas for communication with control stations such as those of the Royal Flying Doctor Service. *Land Stations*—Stations established at fixed locations for communication with mobile stations. *Coast Stations*—Land stations for communication with ocean-going vessels. *Mobile Stations*—Equipment installed in aircraft (aeronautical), motor vehicles (land mobile services), harbour vessels (harbour mobile services) and ocean-going vessels (ship), and mobile equipment of organizations such as the Royal Flying Doctor Service.

CIVIL RADIO-COMMUNICATION STATIONS (†) AUTHORIZED—30th JUNE, 1962

Type of Station	Number	Type of Station	Number
TRANSMITTING AND RECEIVING		TRANSMITTING AND RECEIVING—*cntd.*	
Fixed Stations—		Mobile Stations—	
Aeronautical	15	Aeronautical	122
Services with Other Countries	11	Land Mobile Services	2,123
Outposts	363	Harbour Mobile Services	72
Other	91	Outpost	219
Land Stations—		Ship	175
Aeronautical	14	Amateur	316
Base Stations—			
Land Mobile Services	206	TOTAL—TRANSMITTING AND RECEIVING	3,801
Harbour Mobile Services	22	RECEIVING ONLY (Fixed)	46
Coast	17		
Special Experimental	35	GRAND TOTAL	3,847

(†) See letterpress immediately preceding table.

At the 30th June, 1962 there were 47,730 civil radio-communication stations authorized throughout Australia. They comprised 2,777 fixed stations, 3,995 land stations, 36,624 mobile stations (including 177 stations which could not be classified according to States), and 4,334 amateur stations.

At the 31st March, 1962, Western Australian coastal radio stations at Perth, Broome, Esperance and Geraldton were operated by the Overseas Telecommunications Commission, and at Wyndham by the Department of Civil Aviation as agent for the Commission.

The Commission's coastal radio service provides, as its principal function, essential maritime communications, including distress signals, navigation warnings, air-sea rescue service and radio-medical service messages, meteorological messages and time signals, as well as naval traffic as required. It provides also, by radio-telegraph and radio-telephone, commercial communications with ships at sea and, by radio-telephone, message communication with small vessels. Certain coastal radio stations in remote locations also perform a dual function in providing a radio-telegraph service with extensive networks of mainland and island outpost stations.

The following table relates to traffic handled by coastal radio stations in Western Australia during each of the years 1960–61 and 1961–62.

COASTAL RADIO SERVICE TRAFFIC

Station	Paid Traffic		Free Traffic		Meteorological Traffic		Total	
	Messages	Words	Messages	Words	Messages	Words	Messages	Words
YEAR ENDED 31st MARCH, 1961								
Perth	21,799	526,688	2,391	47,666	19,709	665,774	43,899	1,240,128
Broome	12,486	235,939	206	7,036	7,500	181,547	20,192	424,522
Esperance	5,526	154,286	301	10,160	3,923	147,809	9,750	312,255
Geraldton	4,933	72,787	255	5,763	1,999	50,641	7,187	129,191
Wyndham	99	1,334			5	44	104	1,378
All Stations	44,843	991,034	3,153	70,625	33,136	1,045,815	81,132	2,107,474
YEAR ENDED 31st MARCH, 1962								
Perth	22,999	519,681	2,007	47,968	21,748	822,384	46,754	1,390,033
Broome	11,615	209,267	853	16,591	7,032	180,225	19,500	406,083
Esperance	5,271	112,252	469	11,112	4,743	163,237	10,483	286,601
Geraldton	5,233	80,106	372	8,940	3,031	98,163	8,636	187,209
Wyndham	77	1,256			7	72	84	1,328
All Stations	45,195	922,562	3,701	84,611	36,561	1,264,081	85,457	2,271,254

BROADCASTING AND TELEVISION

Broadcasting and television services throughout Australia are controlled by the Australian Broadcasting Control Board under the Ministerial direction of the Postmaster-General. The Board is established by a provision of the Broadcasting and Television Act 1942–1962, which places under its general control the National Broadcasting Service, the National Television Service, the Commercial Broadcasting Service and the Commercial Television Service. The Act prescribes the fees payable for broadcast listeners' licences and television viewers' licences, while the fees to be charged for licences to operate commercial broadcasting and television stations are provided for in the Broadcasting and Television Stations Licence Fees Act 1956.

The principal functions of the Australian Broadcasting Control Board are to ensure that services by broadcasting stations and television stations are in accordance with approved plans, that stations are operated in accordance with appropriate technical standards, and that adequate and comprehensive programmes are provided. Subject to the approval of the Minister and of the Treasurer, the Board may give financial and other assistance to commercial broadcasting stations for the purpose of ensuring that programmes of adequate extent, standard and variety are provided in the areas which they serve. The Board is required to hold public inquiries into applications for licences for commercial broadcasting and television stations in areas for which the Minister proposes to grant licences.

The Australian Broadcasting Commission, which is constituted under the Broadcasting and Television Act 1942–1962, controls the activities of, and provides programmes for, the National Broadcasting

Service and the National Television Service. The operations of the Commission are financed by appropriations made by the Commonwealth Parliament.

The income of licensees of commercial broadcasting and television stations is derived from advertisements and other forms of publicity.

Broadcasting

The following list shows the call sign, the location, the frequency and the aerial power of each of the broadcasting stations operating in Western Australia at the 30th June, 1962.

BROADCASTING STATIONS AT 30th JUNE, 1962

Type and Location	Call Sign	Frequency (K/cs.)	Aerial Power (Watts)	Type and Location	Call Sign	Frequency (K/cs.)	Aerial Power (Watts)
NATIONAL STATIONS				COMMERCIAL STATIONS			
Medium Frequency				Perth	6IX	1,080	2,000
				"	6KY	1,210	2,000
Perth	6WF	690	50,000	"	6PM	1,000	2,000
"	6WN	810	10,000	"	6PR	880	2,000
Albany	6AL	650	400	Northam	6AM	980	2,000
Kalgoorlie	6GF	720	2,000	Bridgetown	6BY	900	2,000
Geraldton	6GN	830	2,000	Collie	6CI	1,130	2,000
Northam	6NM	600	200	Geraldton	6GE	1,010	2,000
Wagin	6WA	560	50,000	Kalgoorlie	6KG	860	2,000
				Merredin	6MD	1,100	2,000
High Frequency				Narrogin	6NA	920	2,000
				Bunbury	6TZ	960	2,000
Perth	VLW	(a)	2,000	Albany	6VA	780	2,000
"	VLX	(a)	10,000	Katanning	6WB	1,070	2,000

(a) The frequencies on which these stations transmit are varied as required to obtain optimum results.

The following table gives particulars of broadcast licences in force in Western Australia at the 30th June of each of the years from 1958 to 1962. The revenue received from broadcast listeners' licences in the State during each financial year from 1957–58 to 1961–62 is also shown. Licences are granted to certain classes of pensioners at a reduced fee and are issued free of charge to blind persons and to schools.

BROADCAST LICENCES

Particulars	Year ended 30th June :				
	1958	1959	1960	1961	1962
Broadcasting Licences (a)—					
National Stations	9	9	9	9	9
Commercial Stations	14	14	14	14	14
Total	23	23	23	23	23
Broadcast Listeners' Licences (a)—					
Ordinary	142,271	150,002	150,611	150,920	144,729
Pensioners'	16,648	18,628	20,338	21,253	23,236
Blind Persons'	336	380	395	395	370
Schools'	296	262	349	313	341
Total	159,551	169,272	171,693	172,881	168,676
Revenue from Broadcast Listeners' Licences £	398,214	422,115	420,319	418,615	407,122

(a) Number in force at 30th June.

Television

Television services in Western Australia are provided by one national station and one commercial station, both of which transmit from Perth. The commercial station, TVW (Channel 7), began full-scale transmission on the 16th October, 1959 and the national station, ABW (Channel 2), on the 7th May, 1960.

The following table shows the numbers of television viewers' licences current at the 30th June in each year from 1960 to 1962, and the revenue received during each financial year from 1959–60 to 1961–62. As with broadcast listeners' licences, television viewers' licences are available at a reduced fee to certain pensioners and free of charge to blind persons and to schools.

TELEVISION VIEWERS' LICENCES

Particulars	Year ended 30th June :		
	1960	1961	1962
Viewers' Licences (*a*)—			
Ordinary	33,377	64,186	69,705
Pensioners'	2,168	5,335	7,250
Blind Persons'	53	96	105
Schools'	6	11	10
Hirers' (including Short-term) (*b*)	n.a.	n.a.	6,881
Total	35,604	69,628	83,951
Revenue from Viewers' Licences £	165,494	323,947	379,781

"n.a." denotes "not applicable"—see note (*b*).

(*a*) Number in force at 30th June. (*b*) From July, 1961 hiring firms have been required to take out a separate licence for each television receiver let out on hire.

CHAPTER X—EMPLOYMENT, WAGES AND PRICES

PART 1—EMPLOYMENT

NOTE—In addition to the employment data appearing in this Part, references to the numbers of persons engaged in particular activities are to be found elsewhere in the Year Book. In Chapter V, for example, Part 1—*Education* shows numbers engaged in teaching, while Part 3—*Health Services, Hospitals and Homes for the Aged* contains details of hospital staffs. In Chapter VIII, Part 1—*Primary Production* gives male employment on rural holdings, at mines and in fishing, and Part 2—*Secondary Production* includes tables relating wholly, or in part, to employment in factories. Chapter IX, Part 2—*Transport* shows numbers engaged in various types of transport undertakings.

The most detailed and comprehensive statistics of employment of the population are those which are derived from the periodic Population Census. Among the most useful of the tabulations based on these enumerations are those which classify the population according to occupational status and industry.

THE WORK FORCE

It is customary in modern census practice to distinguish between the economically active and inactive sectors of the community on the basis of those " In the Work Force " and those " Not in the Work Force."

The *work force* comprises all persons who are actively engaged in an industry, business, trade or service, as well as those who are normally engaged in such an activity but are not at work at the time of the investigation. It includes employers, the self-employed, wage and salary earners, persons helping in an activity without receiving wage or salary, and those not at work.

The *self-employed* comprise persons working on their own account but not employing others.

Persons *not at work* include those who, though usually working, were not actively engaged at the time of the census on account of sickness, accident or industrial dispute, were unable to secure employment, were temporarily laid off or inactive for any other reason.

Persons *not in the work force* include children not attending school, full-time students and children attending school, persons of independent means, those engaged in home duties, pensioners and annuitants, and inmates of institutions.

The comprehensive tables resulting from the census include detailed analyses of the work force according to such characteristics as age, conjugal condition, religion, birthplace, occupational status and industry. For the purpose of this Chapter, only a selection of the tables, in condensed form, relating to occupational status and industry have been included.

In 1848, at the time of the first systematic census in Western Australia, about 64 per cent. of the total male population of 2,818 were in the work force, largely engaged in agricultural and pastoral pursuits. This proportion reached a maximum at the Census of 1901 when more than three-quarters of the male population were in the work force. Later censuses show a general decline and in 1961 the proportion stood at 57·67 per cent.

In 1901 there were 13,068 females in the work force, representing 18·34 per cent. of the female population. Each census since 1901 has shown a large increase in the number of economically active females until at the 30th June, 1961 a total of 63,266, or almost five times the female work force of 1901, were found to be so engaged. The number of males in the work force had increased during the same period by 154 per cent. from 85,077 to 216,518.

In the following table the numbers and proportions of males, females and persons " in the work force " and " not in the work force " are shown for each census from 1901 to 1961. The table also provides an analysis of the work force according to occupational status.

POPULATION CLASSIFIED ACCORDING TO OCCUPATIONAL STATUS

(Exclusive of full-blood aboriginals)

Census Year (a)	In Work Force							Not in Work Force	Total Population
	At Work					Not at Work	Total in Work Force		
	Employers	Self-employed	Employees (on wage or salary)	Helpers (not on wage or salary)	Total				
MALES									
1901	7,792	10,322	61,848	1,920	81,882	3,195	85,077	27,798	112,875
1911	13,734	12,484	81,206	2,497	109,921	3,647	113,568	47,997	161,565
1921	8,656	20,434	77,589	1,413	108,092	7,752	115,844	61,434	177,278
1933	15,572	25,677	87,561	2,770	131,580	21,478	153,058	80,879	233,937
1947	14,028	24,222	118,501	1,713	158,464	5,473	163,937	94,139	258,076
1954	16,871	26,165	158,413	1,515	202,964	2,077	205,041	125,317	330,358
1961	17,395	25,924	164,241	1,039	208,599	7,919	216,518	158,934	375,452
Proportion of Male Population (per cent.)									
1901	6·90	9·15	54·79	1·70	72·54	2·83	75·37	24·63	100·00
1911	8·50	7·73	50·26	1·54	68·03	2·26	70·29	29·71	100·00
1921	4·88	11·53	43·77	0·80	60·98	4·37	65·35	34·65	100·00
1933	6·66	10·98	37·43	1·18	56·25	9·18	65·43	34·57	100·00
1947	5·43	9·39	45·92	0·66	61·40	2·12	63·52	36·48	100·00
1954	5·11	7·92	47·95	0·46	61·44	0·63	62·07	37·93	100·00
1961	4·63	6·90	43·75	0·28	55·56	2·11	57·67	42·33	100·00
FEMALES									
1901	651	1,814	9,173	951	12,589	479	13,068	58,181	71,249
1911	1,004	2,203	15,255	561	19,023	662	19,685	100,864	120,549
1921	661	3,011	19,290	85	23,047	1,405	24,452	131,002	155,454
1933	1,596	3,089	25,727	170	30,582	3,996	34,578	170,337	204,915
1947	1,555	2,733	36,786	228	41,302	1,161	42,463	201,941	244,404
1954	2,246	3,374	46,201	798	52,619	741	53,360	256,053	309,413
1961	3,126	3,860	53,451	585	61,022	2,244	63,266	297,911	361,177
Proportion of Female Population (per cent.)									
1901	0·91	2·55	12·87	1·34	17·67	0·67	18·34	81·66	100·00
1911	0·83	1·83	12·65	0·47	15·78	0·55	16·33	83·67	100·00
1921	0·43	1·94	12·41	0·05	14·83	0·90	15·73	84·27	100·00
1933	0·78	1·51	12·56	0·08	14·93	1·95	16·88	83·12	100·00
1947	0·64	1·12	15·05	0·09	16·90	0·47	17·37	82·63	100·00
1954	0·73	1·09	14·93	0·26	17·01	0·24	17·25	82·75	100·00
1961	0·87	1·07	14·80	0·16	16·90	0·62	17·52	82·48	100·00
PERSONS									
1901	8,443	12,136	71,021	2,871	94,471	3,674	98,145	85,979	184,124
1911	14,738	14,687	96,461	3,058	128,944	4,309	133,253	148,861	282,114
1921	9,317	23,445	96,879	1,498	131,139	9,157	140,296	192,436	332,732
1933	17,168	28,766	113,288	2,940	162,162	25,474	187,636	251,216	438,852
1947	15,583	26,955	155,287	1,941	199,766	6,634	206,400	296,080	502,480
1954	19,117	29,539	204,614	2,313	255,583	2,818	258,401	381,370	639,771
1961	20,521	29,784	217,692	1,624	269,621	10,163	279,784	456,845	736,629
Proportion of Total Population (per cent.)									
1901	4·59	6·59	38·57	1·56	51·31	1·99	53·30	46·70	100·00
1911	5·22	5·21	34·19	1·08	45·70	1·53	47·23	52·77	100·00
1921	2·80	7·05	29·11	0·45	39·41	2·75	42·16	57·84	100·00
1933	3·91	6·56	25·81	0·67	36·95	5·81	42·76	57·24	100·00
1947	3·10	5·37	30·90	0·39	39·76	1·32	41·08	58·92	100·00
1954	2·99	4·62	31·98	0·36	39·95	0·44	40·39	59·61	100·00
1961	2·79	4·04	29·55	0·22	36·60	1·38	37·98	62·02	100·00

(a) For Census dates see the section *Censuses* in Chapter IV, Part 1—*Population.*

INDUSTRY OF THE POPULATION

The Census

For census purposes, industry may be defined as any single branch of productive activity, trade or service. It is concerned with the activities of persons, firms or businesses considered as a group producing the same commodity, performing the same process or providing the same service. All persons engaged in any such branch of economic activity are classified industrially as belonging to that particular branch irrespective of their personal occupation within the industry. Examples are :—Mining, which includes, in addition to miners and prospectors, such persons as laboratory technicians, transport workers and office staff employed by mining companies ; Shipping, which covers staff members of shipping companies and agencies, as well as ships' crews ; professional activities such as Medicine, Law and Architecture which include not only qualified practitioners but also persons employed by them as, for example, receptionists, law clerks and draftsmen.

In the following table, the population at the 30th June, 1961 is classified according to the main industrial groups such as Primary Production ; Mining and Quarrying ; Manufacturing ; and so on, and some component sub-groups such as Fishing ; Hunting and Trapping ; and Agriculture and Mixed Farming.

It should be noted that the particulars shown under Public Authority Activities (N.E.I.) are residual figures comprising those persons in the administrative sphere of general government, local government and foreign consular services who have not been classified elsewhere. They do not, therefore, represent the total numbers of persons engaged in or attached to all fields of government service, Commonwealth, State or Local. For example, employees of the Railways Commission have been assigned, in accordance with evidence contained in their census schedules, to Railway workshops in the sub-group Manufacture, Assembly and Repair of Ships, Vehicles, Parts and Accessories ; to Motor bus services in the sub-group Road Transport ; to Construction and maintenance of permanent way in the sub-group Construction Works and Maintenance (other than Buildings) or to Rail services under Rail and Air Transport. Further examples of this allocation of government workers to industries other than Public Authority Activities (N.E.I.) are provided by Departments such as Education, Public Works, Postmaster-General's, Repatriation, and local government authorities.

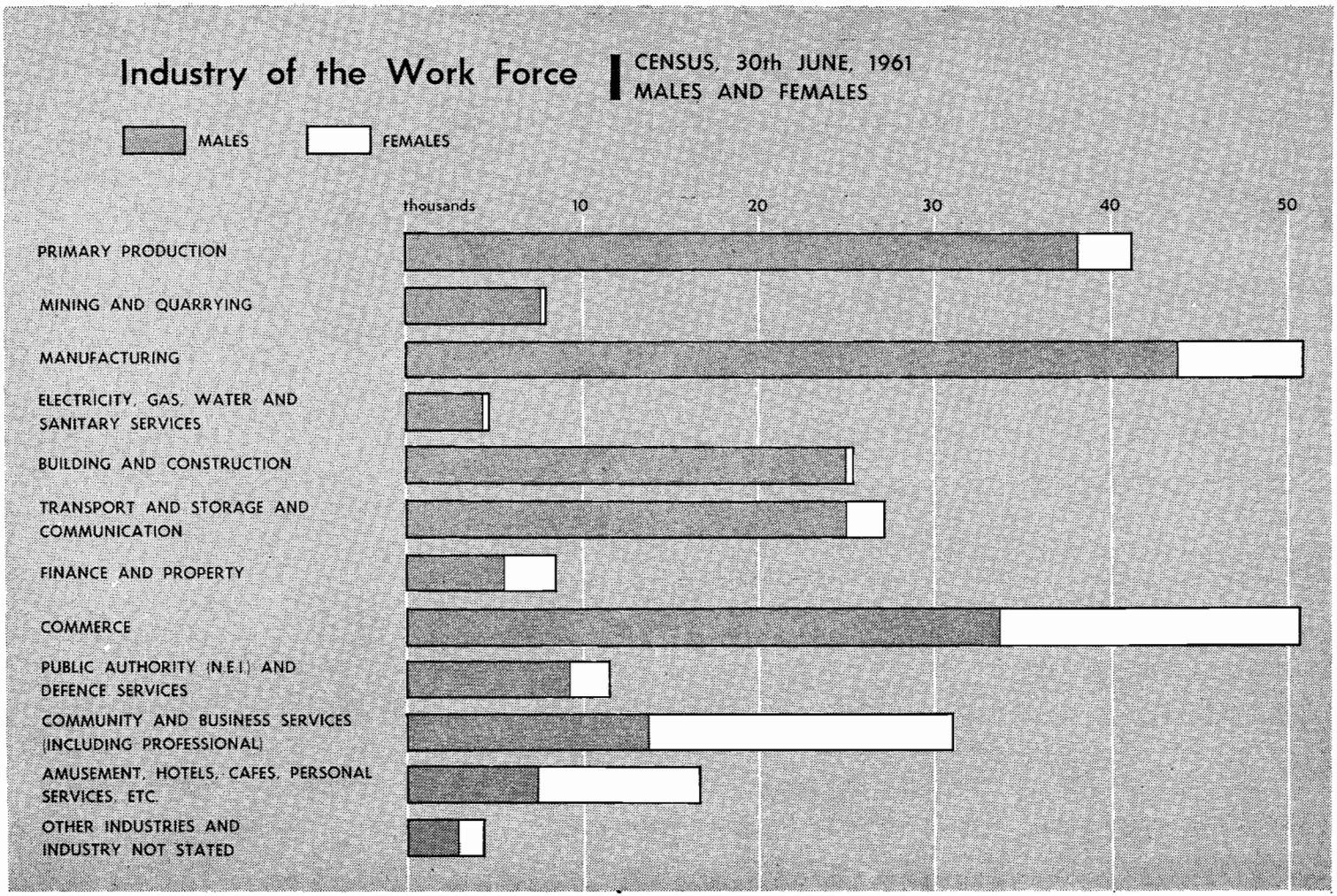
At the 1961 Census, there were 4,254 persons in the work force who failed to state their industry or gave an inadequate description. Of the 275,530 persons (or 98·5 per cent. of the work force) who could be allocated to an industry, 18·49 per cent. were classified to Manufacturing, 18·43 per cent. to Commerce, 14·94 per cent. to Primary Production, 11·25 per cent. to Community and Business Services (including Professional), 9·22 per cent. to Building and Construction, 7·60 per cent. to Transport and Storage, 6·05 per cent. to Amusement, Hotels and other Accommodation, Cafes, Personal Service, etc., 4·14 per cent. to Public Authority (not elsewhere included) and Defence Services, 3·06 per cent. to Finance and Property, 2·86 per cent. to Mining and Quarrying, 2·23 per cent. to Communication, and 1·71 per cent. to Electricity, Gas, Water and Sanitary Services.

The total of 456,845 persons not in the work force at the 30th June, 1961 comprised 91,431 children not attending school, 162,246 full-time students and children attending school, 7,553 persons of independent means, 138,564 engaged in home duties, 49,163 pensioners and annuitants, 5,412 inmates of institutions and 2,476 others not engaged in industry.

The table on pages 380 and 381 shows the geographical distribution of the work force according to industry. It provides a useful summary of the industrial structure within each of the eleven Statistical Divisions of the State as well as indicating the relative importance of the several Divisions in a particular industry. The migratory population comprises those who, at midnight between the 29th and the 30th June, 1961, were on board ships or were travelling on long-distance trains or aircraft and had not been enumerated elsewhere. Of the total of 2,453 migratory persons in the work force, 1,889 gave their industry as Shipping, 61 were naval personnel, and 61 were engaged in Rail and Air Transport.

Classification of the components of the work force according to industry, as in the table on page 382, furnishes much useful information. It is interesting to note, for example, the preponderance of employers and the self-employed in Primary Production. Of the 41,166 persons engaged in this industry at the 30th June, 1961 almost 60 per cent. were in one or other of these categories.

An analysis of the number of persons appearing in the table as " Not at Work " shows that, of the total of 10,163 persons, 6,651 were unable to secure employment, 1,567 were absent from work on account of sickness or accident, 861 were changing jobs, 670 were temporarily laid off, and 414 were not at work for other reasons or for a reason which was not stated.


Industry of the Work Force
CENSUS, 30th JUNE, 1961
MALES AND FEMALES
MALES
FEMALES
thousands
10
20
30
40
50
PRIMARY PRODUCTION
MINING AND QUARRYING
MANUFACTURING
ELECTRICITY, GAS, WATER AND SANITARY SERVICES
BUILDING AND CONSTRUCTION
TRANSPORT AND STORAGE AND COMMUNICATION
FINANCE AND PROPERTY
COMMERCE
PUBLIC AUTHORITY (N.E.I.) AND DEFENCE SERVICES
COMMUNITY AND BUSINESS SERVICES (INCLUDING PROFESSIONAL)
AMUSEMENT, HOTELS, CAFES, PERSONAL SERVICES, ETC.
OTHER INDUSTRIES AND INDUSTRY NOT STATED

POPULATION CLASSIFIED ACCORDING TO INDUSTRY—CENSUS 30th JUNE, 1961

(Exclusive of full-blood aboriginals)

Industry	Metropolitan Statistical Division			Rest of State (*a*)			Whole State		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
Primary Production—									
Fishing	606	12	618	1,038	5	1,043	1,644	17	1,661
Hunting and Trapping	7	1	8	90		90	97	1	98
Agriculture and Mixed Farming	1,389	155	1,544	21,190	1,797	22,987	22,579	1,952	24,531
Grazing	434	31	465	6,556	564	7,120	6,990	595	7,585
Dairying	113	15	128	4,111	368	4,479	4,224	383	4,607
Poultry Farming	169	55	224	319	82	401	488	137	625
Forestry	106	4	110	1,042	4	1,046	1,148	8	1,156
Other	190	13	203	689	11	700	879	24	903
Total—Primary Production	3,014	286	3,300	35,035	2,831	37,866	38,049	3,117	41,166
Mining and Quarrying—									
Mining (including Open-cut Mining)	243	25	268	7,153	113	7,266	7,396	138	7,534
Quarrying	139	13	152	197	2	199	336	15	351
Total—Mining and Quarrying	382	38	420	7,350	115	7,465	7,732	153	7,885
Manufacturing—									
Cement, Bricks, Glass and Stone	2,306	191	2,497	932	36	968	3,238	227	3,465
Petroleum and Coal (excluding Chemical and Gas Works)	256	20	276	620	44	664	876	64	940
Founding, Engineering and Metal Working	8,645	796	9,441	2,133	105	2,238	10,778	901	11,679
Manufacture, Assembly and Repair of Ships, Vehicles, Parts and Accessories	5,375	132	5,507	1,664	30	1,694	7,039	162	7,201
Yarns, Textiles and Articles thereof (excluding Clothing and Furnishing Drapery)	454	153	607	265	179	444	719	332	1,051
Clothing and Knitted Goods (including Needleworking)	361	1,454	1,815	58	193	251	419	1,647	2,066
Boots, Shoes and Accessories (other than Rubber)	501	218	719	80	12	92	581	230	811
Food, Drink and Tobacco	4,030	1,118	5,148	2,313	438	2,751	6,343	1,556	7,899
Sawmilling, Wood Products (other than Furniture)	1,773	80	1,853	3,748	34	3,782	5,521	114	5,635
Furniture and Fittings (other than Metal), Bedding and Furnishing Drapery	1,484	200	1,684	154	15	169	1,638	215	1,853
Paper and Paper Products, Printing, Packaging, Book-binding and Photography	2,788	910	3,698	402	127	529	3,190	1,037	4,227
Chemicals, Dyes, Explosives, Paints and Non-Mineral Oils	1,306	253	1,559	556	24	580	1,862	277	2,139
Other and Undefined	1,302	323	1,625	313	52	365	1,615	375	1,990
Total—Manufacturing	30,581	5,848	36,429	13,238	1,289	14,527	43,819	7,137	50,956
Electricity, Gas, Water and Sanitary Services (Production, Supply and Maintenance)—									
Gas and Electricity	1,583	134	1,717	838	27	865	2,421	161	2,582
Water Supply, Sewerage, etc.	1,311	86	1,397	715	12	727	2,026	98	2,124
Total—Electricity, Gas, Water and Sanitary Services	2,894	220	3,114	1,553	39	1,592	4,447	259	4,706
Building and Construction—									
Construction and Repair of Buildings	10,198	276	10,474	4,486	65	4,551	14,684	341	15,025
Construction Works (other than Buildings)	3,262	39	3,301	7,041	50	7,091	10,303	89	10,392
Total—Building and Construction	13,460	315	13,775	11,527	115	11,642	24,987	430	25,417

Transport and Storage—									
Road Transport	4,061	353	4,414	2,332	120	2,452	6,393	473	6,866
Shipping	843	152	995	2,055	30	2,085	2,898	182	3,080
Loading and Discharging Vessels	1,973	15	1,988	699	6	705	2,672	21	2,693
Rail and Air Transport	3,952	264	4,216	3,872	79	3,951	7,824	343	8,167
Storage	96	12	108	25	1	26	121	13	134
Total—Transport and Storage	10,925	796	11,721	8,983	236	9,219	19,908	1,032	20,940
Communication	3,386	471	3,857	1,736	559	2,295	5,122	1,030	6,152
Finance and Property—									
Banking	1,815	872	2,687	845	257	1,102	2,660	1,129	3,789
Insurance	1,431	1,025	2,456	248	96	344	1,679	1,121	2,800
Other Finance and Property	961	631	1,592	166	95	261	1,127	726	1,853
Total—Finance and Property	4,207	2,528	6,735	1,259	448	1,707	5,466	2,976	8,442
Commerce—									
Wholesale Trade	8,568	2,562	11,130	2,162	387	2,549	10,730	2,949	13,679
Livestock and Primary Produce Dealing, etc.	1,756	439	2,195	1,388	170	1,558	3,144	609	3,753
Retail Trade	12,817	8,971	21,788	7,038	4,535	11,573	19,855	13,506	33,361
Total—Commerce	23,141	11,972	35,113	10,588	5,092	15,680	33,729	17,064	50,793
Public Authority (N.E.I.) and Defence Services—									
Public Authority Activities (N.E.I.)	5,044	1,615	6,659	1,604	402	2,006	6,648	2,017	8,665
Defence—Enlisted Personnel	1,473	32	1,505	757	21	778	2,230	53	2,283
Civilian Employees	329	67	396	71	4	75	400	71	471
Total—Public Authority (N.E.I.) and Defence Services	6,846	1,714	8,560	2,432	427	2,859	9,278	2,141	11,419
Community and Business Services (including Professional)—									
Law, Order and Public Safety	1,458	479	1,937	617	103	720	2,075	582	2,657
Religion and Social Welfare	693	714	1,407	535	302	837	1,228	1,016	2,244
Health, Hospitals, etc.	2,754	6,401	9,155	835	2,657	3,492	3,589	9,058	12,647
Education	3,060	3,762	6,822	1,742	1,678	3,420	4,802	5,440	10,242
Other (including Professional)	1,554	1,026	2,580	387	233	620	1,941	1,259	3,200
Total—Community and Business Services	9,519	12,382	21,901	4,116	4,973	9,089	13,635	17,355	30,990
Amusement, Hotels and Other Accommodation, Cafes, Personal Service, etc.—									
Amusement, Sport and Recreation	1,759	549	2,308	489	81	570	2,248	630	2,878
Private Domestic Service	345	777	1,122	134	930	1,064	479	1,707	2,186
Hotels, Boarding Houses, etc., and Restaurants	1,668	2,817	4,485	1,492	2,251	3,743	3,160	5,068	8,228
Other Personal Services	1,182	1,370	2,552	382	433	815	1,564	1,803	3,367
Total—Amusement, Hotels, Personal Service, etc.	4,954	5,513	10,467	2,497	3,695	6,192	7,451	9,208	16,659
Other Industries and Industry inadequately described (*b*)	1,855	871	2,726	1,040	493	1,533	2,895	1,364	4,259
Total—Persons in the Work Force	**115,164**	**42,954**	**158,118**	**101,354**	**20,312**	**121,666**	**216,518**	**63,266**	**279,784**
Persons not in the Work Force	89,943	172,072	262,015	68,991	125,839	194,830	158,934	297,911	456,845
GRAND TOTAL	**205,107**	**215,026**	**420,133**	**170,345**	**146,151**	**316,496**	**375,452**	**361,177**	**736,629**

(*a*) Includes "Migratory" population; for definition, see footnote to next table. (*b*) Includes "Industry not stated."

INDUSTRY OF THE POPULATION IN STATISTICAL DIVISIONS

CENSUS 30th JUNE, 1961

(Exclusive of full-blood aboriginals)

Statistical Division	Primary Production	Mining and Quarrying	Manufacturing	Electricity, Gas, Water, and Sanitary Services	Building and Construction	Transport and Storage	Communication	Finance and Property	Commerce	Public Authority (N.E.I.) and Defence Services	Community and Business Services (including Professional)	Amusement, Hotels, Cafes, etc.	Other and Indefinite	Total in Work Force	Not in the Work Force	Grand Total
MALES																
Metropolitan	3,014	382	30,581	2,894	13,460	10,925	3,386	4,207	23,141	6,846	9,519	4,954	1,855	115,164	89,943	205,107
Swan	3,013	135	4,513	298	1,431	1,077	258	213	1,894	834	901	391	253	15,211	13,266	28,477
South-West	6,745	886	4,403	432	2,286	1,551	315	307	2,303	374	772	527	149	21,050	16,264	37,314
Southern Agricultural	5,894	20	1,085	114	1,822	819	247	195	1,648	197	472	315	138	12,966	9,033	21,999
Central Agricultural	9,123	48	1,354	247	2,130	1,473	322	233	2,106	272	664	402	162	18,536	12,428	30,964
Northern Agricultural	6,186	78	638	110	1,363	793	282	134	1,271	168	456	291	95	11,865	7,713	19,578
Eastern Goldfields	1,323	4,800	592	291	1,016	770	144	128	1,012	235	488	363	92	11,254	7,176	18,430
Central	638	368	30	14	173	96	54	6	68	27	53	56	2	1,585	780	2,365
North-West	1,105	20	84	11	269	122	32	13	104	68	66	39	24	1,957	797	2,754
Pilbara	347	561	37	20	204	160	43	4	67	33	50	45	17	1,588	531	2,119
Kimberley	634	423	435	13	767	172	36	9	86	127	162	54	68	2,986	830	3,816
Migratory (*a*)	27	11	67	3	66	1,950	3	17	29	97	32	14	40	2,356	173	2,529
TOTAL, WESTERN AUSTRALIA	38,049	7,732	43,819	4,447	24,987	19,908	5,122	5,466	33,729	9,278	13,635	7,451	2,895	216,518	158,934	375,452
FEMALES																
Metropolitan	286	38	5,848	220	315	796	471	2,528	11,972	1,714	12,382	5,513	871	42,954	172,072	215,026
Swan	266	5	571	8	26	61	44	140	990	126	851	403	94	3,585	23,203	26,788
South-West	508	9	205	10	20	34	140	90	1,172	78	1,034	758	97	4,155	30,168	34,323

Southern Agricultural	489	1	251	1	13	27	89	61	687	46	569	513	55	2,802	16,822	19,624
Central Agricultural	795		81	5	19	24	127	57	896	56	890	664	72	3,686	22,944	26,630
Northern Agricultural	431		77	9	11	29	88	40	546	40	587	510	65	2,433	13,774	16,207
Eastern Goldfields	77	73	64	5	10	15	35	53	603	51	639	438	51	2,114	13,598	15,712
Central	77	3	1		3	5	11	1	31	6	83	122	3	346	1,248	1,594
North-West	121	1	12		2	5	7	2	62	9	76	93	6	396	1,413	1,809
Pilbara	34	15			3	6	7		38	4	51	91	10	259	865	1,124
Kimberley	33	8	18	1	8	13	11	1	54	11	173	90	18	439	1,413	1,852
Migratory (*a*)			9			17		3	13		20	13	22	97	391	488
TOTAL, WESTERN AUSTRALIA	3,117	153	7,137	259	430	1,032	1,030	2,976	17,064	2,141	17,355	9,208	1,364	63,266	297,911	361,177

PERSONS

Metropolitan	3,300	420	36,429	3,114	13,775	11,721	3,857	6,735	35,113	8,560	21,901	10,467	2,726	158,118	262,015	420,133
Swan	3,279	140	5,084	306	1,457	1,138	302	353	2,884	960	1,752	794	347	18,796	36,469	55,265
South-West	7,253	895	4,608	442	2,306	1,585	455	397	3,475	452	1,806	1,285	246	25,205	46,432	71,637
Southern Agricultural	6,383	21	1,336	115	1,835	846	336	256	2,335	243	1,041	828	193	15,768	25,855	41,623
Central Agricultural	9,918	48	1,435	252	2,149	1,497	449	290	3,002	328	1,554	1,066	234	22,222	35,372	57,594
Northern Agricultural	6,617	78	715	119	1,374	822	370	174	1,817	208	1,043	801	160	14,298	21,487	35,785
Eastern Goldfields	1,400	4,873	656	296	1,026	785	179	181	1,615	286	1,127	801	143	13,368	20,774	34,142
Central	715	371	31	14	176	101	65	7	99	33	136	178	5	1,931	2,028	3,959
North-West	1,226	21	96	11	271	127	39	15	166	77	142	132	30	2,353	2,210	4,563
Pilbara	381	576	37	20	207	166	50	4	105	37	101	136	27	1,847	1,396	3,243
Kimberley	667	431	453	14	775	185	47	10	140	138	335	144	86	3,425	2,243	5,668
Migratory (*a*)	27	11	76	3	66	1,967	3	20	42	97	52	27	62	2,453	564	3,017
TOTAL, WESTERN AUSTRALIA	41,166	7,885	50,956	4,706	25,417	20,940	6,152	8,442	50,793	11,419	30,990	16,659	4,259	279,784	456,845	736,629

(*a*) Comprises persons (both passengers and crew) not enumerated elsewhere who, at midnight between the 29th and the 30th June, 1961, were on board ships or were travelling on long-distance trains or aircraft.

INDUSTRY AND OCCUPATIONAL STATUS OF THE POPULATION
CENSUS 30th JUNE, 1961
(Exclusive of full-blood aboriginals)

Industry Group	In Work Force				Not at Work	Total in Work Force	Proportion in each Industry Group (per cent.)
	At Work						
	Employer	Self-employed	Employee (on Wage or Salary)	Helper (not on Wage or Salary)			
MALES							
Primary Production	6,175	16,253	13,731	873	1,017	38,049	17·57
Mining and Quarrying	65	311	7,103	9	244	7,732	3·57
Manufacturing	1,810	1,326	39,328	19	1,336	43,819	20·24
Electricity, Gas, Water and Sanitary Services	18	34	4,345		50	4,447	2·05
Building and Construction	1,994	1,933	19,756	18	1,286	24,987	11·54
Transport and Storage	548	1,590	17,253	10	507	19,908	9·19
Communication	4	16	5,069		33	5,122	2·37
Finance and Property	245	192	4,978	1	50	5,466	2·52
Commerce	3,929	2,713	26,230	44	813	33,729	15·58
Public Authority (n.e.i.) and Defence Services			9,184		94	9,278	4·29
Community and Business Services (including Professional)	1,318	376	11,791	23	127	13,635	6·30
Amusement, Hotels, Cafes, Personal Service, etc.	1,267	1,090	4,694	30	370	7,451	3·44
Other (*a*)	22	90	779	12	1,992	2,895	1·34
Total Males in Work Force	17,395	25,924	164,241	1,039	7,919	216,518	100·00
FEMALES							
Primary Production	883	1,429	582	210	13	3,117	4·93
Mining and Quarrying	4	1	148			153	0·24
Manufacturing	243	175	6,426	26	267	7,137	11·28
Electricity, Gas, Water and Sanitary Services	2	1	254		2	259	0·41
Building and Construction	74	16	331	4	5	430	0·68
Transport and Storage	64	46	911	4	7	1,032	1·63
Communication	1	15	997	3	14	1,030	1·63
Finance and Property	22	21	2,914	3	16	2,976	4·70
Commerce	1,045	979	14,477	143	420	17,064	26·97
Public Authority (n.e.i.) and Defence Services			2,129		12	2,141	3·39
Community and Business Services (including Professional)	143	216	16,650	71	275	17,355	27·43
Amusement, Hotels, Cafes, Personal Service, etc.	632	949	7,143	115	369	9,208	14·55
Other (*a*)	13	12	489	6	844	1,364	2·16
Total Females in Work Force	3,126	3,860	53,451	585	2,244	63,266	100·00
PERSONS							
Primary Production	7,058	17,682	14,313	1,083	1,030	41,166	14·72
Mining and Quarrying	69	312	7,251	9	244	7,885	2·82
Manufacturing	2,053	1,501	45,754	45	1,603	50,956	18·21
Electricity, Gas, Water and Sanitary Services	20	35	4,599		52	4,706	1·68
Building and Construction	2,068	1,949	20,087	22	1,291	25,417	9·09
Transport and Storage	612	1,636	18,164	14	514	20,940	7·48
Communication	5	31	6,066	3	47	6,152	2·20
Finance and Property	267	213	7,892	4	66	8,442	3·02
Commerce	4,974	3,692	40,707	187	1,233	50,793	18·15
Public Authority (n.e.i.) and Defence Services			11,313		106	11,419	4·08
Community and Business Services (including Professional)	1,461	592	28,441	94	402	30,990	11·08
Amusement, Hotels, Cafes, Personal Service, etc.	1,899	2,039	11,837	145	739	16,659	5·95
Other (*a*)	35	102	1,268	18	2,836	4,259	1·52
Total in Work Force	20,521	29,784	217,692	1,624	10,163	279,784	100·00

(*a*) Comprises the groups "Other Industries" and "Industry Inadequately Described or Not Stated."

Estimates of Employment

In addition to employment data provided by the census, there are available monthly estimates of the number of wage and salary earners in civilian employment, excluding employees in rural industry (comprising agriculture, grazing and dairying) and private domestic service.

The figures appearing in the next two tables, and in the *Statistical Summary from 1829* following this Chapter, are part of a new series which replaces entirely that previously published for all periods from June, 1954. The prime purpose of the new series is the same as that of the previous series in that

it aims to measure currently, and as nearly as possible with available data, *monthly trends* in employment in the defined field.

Although covering virtually the same part of the work force, the new series, in addition to incorporating revised estimates, differs from the old in the classification of some industries and in being based on comprehensive " benchmark " data derived for the purpose from the Population Censuses of June, 1954 and June, 1961. Figures for periods between and subsequent to the two benchmark points in time are estimates obtained from three main sources, (i) Pay-roll Tax returns, which are lodged by all employers paying more than £200 per week in wages, other than those specifically exempted under the Pay-roll Tax Assessment Act 1941–1962, (ii) returns from government bodies, and (iii) some other direct current records of employment, *e.g.* for hospitals. The data thus derived are supplemented by estimates of the changes in number of wage and salary earners not covered by these collections. As they become available, particulars of employment obtained from other collections, notably the annual factory census (*see* Chapter VIII, Part 2) and the censuses and sample surveys of retail establishments, are used to check and, where desirable, to revise estimates in relevant sections.

The terms *employment, number employed, employees* and *wage earners* as used here are synonymous with, and relate to, wage and salary earners on pay-rolls or *in employment* in the latter part of each month, as distinct from numbers of employees *actually working* on a specific date. Some persons working part-time are included.

WAGE AND SALARY EARNERS IN CIVILIAN EMPLOYMENT

Excluding Employees in Rural Industry and Private Domestic Service, and Defence Forces

(thousands)

Year	Month												Average for Year
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
MALES													
1954 (*a*)....						141·2	141·1	141·9	142·1	141·7	142·7	143·0	n.a.
1955	143·1	143·1	144·3	145·5	144·3	144·5	144·2	144·3	145·2	144·7	145·4	146·0	144·6
1956	143·4	146·6	147·0	146·4	146·4	144·7	143·7	143·8	143·7	143·7	144·2	144·1	144·8
1957	143·7	144·8	145·0	144·3	144·0	143·3	142·4	142·3	143·1	143·4	143·5	143·2	143·6
1958	143·4	143·8	144·5	144·0	143·4	143·1	143·8	144·4	145·2	145·6	145·3	145·6	144·3
1959	145·3	145·0	145·7	145·8	145·5	144·9	145·4	145·2	146·0	146·4	146·6	146·6	145·7
1960	146·4	147·2	147·3	146·9	147·0	147·5	147·9	149·3	150·1	149·7	150·1	150·4	148·3
1961	149·1	149·6	149·4	149·4	149·2	148·5	148·6	149·0	149·7	149·6	150·8	150·8	149·5
1962	151·8	152·2	154·1	153·6	154·6	154·7	154·9	155·5	156·3	156·6	156·9	157·3	154·9
1963	158·0	158·2	158·6	159·0	160·0	160·0	159·7	160·6	161·1	161·6	162·7	163·8	160·3
FEMALES													
1954 (*a*)....						43·2	43·4	43·3	43·7	44·3	44·6	44·9	n.a.
1955	43·8	44·9	45·2	45·0	44·9	45·1	45·3	45·1	45·1	45·2	45·8	45·9	45·1
1956	45·0	46·2	46·9	46·8	46·9	46·3	46·2	45·8	45·9	46·0	46·2	46·5	46·2
1957	45·9	47·0	47·1	46·6	46·6	46·1	46·2	46·4	46·6	46·7	47·2	47·7	46·7
1958	47·0	47·4	47·8	47·6	47·5	47·3	47·6	47·9	48·2	48·3	48·4	48·7	47·8
1959	48·1	48·3	48·7	48·9	48·8	48·4	48·5	48·3	48·6	48·7	49·5	49·6	48·7
1960	48·7	49·8	50·1	50·1	50·6	50·4	50·5	50·8	51·1	51·3	51·9	52·4	50·7
1961	51·3	51·7	52·1	52·2	51·8	51·2	51·2	51·2	51·4	51·7	52·3	51·9	51·6
1962	51·7	52·1	53·2	53·2	53·2	53·4	53·4	53·6	54·1	54·2	54·9	54·4	53·4
1963	54·0	54·1	54·8	55·2	55·5	55·5	55·7	55·7	56·0	56·5	57·2	56·9	55·6
PERSONS													
1954 (*a*)....						184·4	184·5	185·2	185·8	186·0	187·3	187·9	n.a.
1955	186·9	188·0	189·5	190·5	189·2	189·6	189·5	189·4	190·3	189·9	191·2	191·9	189·7
1956	188·4	192·8	193·9	193·2	193·3	191·0	189·9	189·6	189·6	189·7	190·4	190·6	191·0
1957	189·6	191·8	192·1	190·9	190·6	189·4	188·6	188·7	189·7	190·1	190·7	190·9	190·3
1958	190·4	191·2	192·3	191·6	190·9	190·4	191·4	192·3	193·4	193·9	193·7	194·3	192·1
1959	193·4	193·3	194·4	194·7	194·3	193·3	193·9	193·5	194·6	195·1	196·1	196·2	194·4
1960	195·1	197·0	197·4	197·0	197·6	197·9	198·4	200·1	201·2	201·0	202·0	202·8	199·0
1961	200·4	201·3	201·5	201·6	201·0	199·7	199·8	200·2	201·1	201·3	203·1	202·7	201·1
1962	203·5	204·3	207·3	206·8	207·8	208·1	208·3	209·1	210·4	210·8	211·8	211·7	208·3
1963	212·0	212·3	213·4	214·2	215·5	215·5	215·4	216·3	217·1	218·1	219·9	220·7	215·9

n.a. denotes " not applicable." (*a*) Estimates for months prior to June, 1954 are not available on a basis comparable with that used for June, 1954 and later.

The estimated monthly figures are derived mainly from reports supplied by employers on an enterprise or establishment basis. The benchmark figures are derived from personal particulars supplied by individual respondents on population census schedules. However, the industry dissections of census information have been adjusted, as nearly as may be, to an " enterprise/establishment " reporting basis. The industry classification used is that of the Population Census of June, 1961.

Employees in rural industry and in private domestic service are not included in the estimates because the available data are inadequate.

In the next table wage and salary earners at the end of December, 1963 are classified according to main industry group and some sub-groups. A dissection into those employed by private employers and by government authorities (Commonwealth, State and Local) is also shown.

WAGE AND SALARY EARNERS IN CIVILIAN EMPLOYMENT—INDUSTRY GROUPS DECEMBER, 1963

Excluding Employees in Rural Industry and Private Domestic Service, and Defence Forces

(thousands)

Industry Group and Sub-group	Males	Females	Persons
Forestry, Fishing and Trapping	1·6		1·6
Mining and Quarrying	7·4	0·2	7·6
Manufacturing	45·2	7·4	52·6
Electricity, Gas, Water and Sanitary Services	4·9	0·3	5·2
Building and Construction	20·8	0·3	21·1
Transport and Storage—			
Road Transport and Storage	5·2	0·4	5·6
Shipping and Stevedoring	4·0	0·2	4·2
Rail and Air Transport	7·6	0·4	8·0
Total—Transport and Storage	16·8	1·0	17·8
Communication	5·4	1·0	6·4
Finance and Property—			
Banking	3·0	1·3	4·3
Other	2·8	2·2	5·0
Total—Finance and Property	5·8	3·5	9·3
Commerce—			
Retail Trade	17·1	12·8	29·9
Wholesale and Other Commerce	12·5	3·4	15·9
Total—Commerce	29·6	16·2	45·8
Public Authority Activities not elsewhere included	7·7	2·3	10·0
Other Industries—			
Health, Hospitals, etc.	3·3	10·0	13·3
Education	5·4	5·4	10·8
Other (*a*)	9·9	9·3	19·2
Total—Other Industries	18·6	24·7	43·3
GRAND TOTAL	163·8	56·9	220·7
Employees of :			
Private Employers	110·4	44·8	155·2
Government Authorities (*b*)—			
Commonwealth Government (*c*)	10·3	2·5	12·8
State Government (*c*)	38·9	9·1	48·0
Local Government	4·2	0·5	4·7
Total—Government Authorities (*b*) (*c*)	53·4	12·1	65·5
GRAND TOTAL	163·8	56·9	220·7

(*a*) Comprises Law, Order and Public Safety ; Religion and Social Welfare ; Other Community and Business Services ; Amusement, Sport and Recreation ; and Hotels, Personal Service, etc. (excluding private domestic service). (*b*) Includes employees of government bodies (Commonwealth, State, Local and semi-government) on services such as railways, road and air transport, shipping, banks, post office, education, broadcasting, television, police, public works, factories, hospitals and institutions, as well as administrative employees. (*c*) Includes semi-government bodies.

CHAPTER X—*continued*

PART 2—WAGES

THE BASIC WAGE

The concept of a " basic " or " living " wage occurs commonly in the determinations of wage-fixing authorities in Australia, although it may vary in definition. Originally the term was understood to mean the minimum or " basic " wage necessary to provide a reasonable standard of comfort for the average worker and his family. In later years, however, economic factors have been taken into account and, in determining specified minimum rates of wage, consideration has been given to the capacity of industry to pay those rates.

There are two tribunals which have authority to declare basic wage rates applicable in Western Australia. They are the Commonwealth Conciliation and Arbitration Commission, and The Western Australian Industrial Commission established by the Industrial Arbitration Act Amendment Act (No. 2), 1963 to replace the former Court of Arbitration.

By an amendment of 1949 to the Commonwealth Conciliation and Arbitration Act, the basic wage for an adult male worker is defined as " that wage, or that part of a wage, which is just and reasonable for an adult male, without regard to any circumstance pertaining to the work upon which, or the industry in which, he is employed." The Act contains a similar definition of a basic wage for females. Before the inclusion of this amendment, the Act empowered the Court to prescribe a " minimum rate of wage " but it neither defined, nor provided for the determination of, a specific " basic wage." In general terms, however, the basic wage was understood to be identifiable as the minimum wage, including " loadings," payable to an adult unskilled labourer. A " loading " may be defined as an addition to the " basic " wage as compensation for some peculiar condition of labour or environment or other circumstance, and not by way of " margin for skill."

The Industrial Arbitration Act, 1912–1963 (State) defines the basic wage as " a wage which the Commission considers to be just and reasonable for the average worker to whom it applies." The Commission must have regard to the needs of the worker to enable him to live in reasonable comfort. By an amendment of 1950 the Commission is required to take into consideration the economic capacity of industry but, in so doing, shall not reduce the basic wage below an amount which it deems necessary to maintain this reasonable standard of comfort.

The Commonwealth Conciliation and Arbitration Commission was established in 1956 by an amendment to the Conciliation and Arbitration Act which had the effect of allocating to the Commission the arbitral functions and to a Commonwealth Industrial Court the judicial functions formerly carried out by the Commonwealth Court of Conciliation and Arbitration. As prescribed in the Act, the Commission consists of a President, not less than two Deputy Presidents, a Senior Commissioner and not less than five Commissioners. At the 31st December, 1963 there were, in addition to the President and the Senior Commissioner, five Deputy Presidents and ten Commissioners. The Act also provides for the appointment of Conciliators.

The Commonwealth Industrial Court consists of a Chief Judge and three other Judges.

The Western Australian Industrial Commission [1] consists of a Chief Industrial Commissioner and three other Commissioners. The Commission in Court Session is constituted by not less than three Commissioners sitting together. An appeal lies to the *Western Australian Industrial Appeal Court* from any decision of the Commission on the ground that it is erroneous in law or in excess of jurisdiction.

Commonwealth Basic Wage

The first determination of a wage standard by a Court in Australia was made in 1907, when Mr. Justice Higgins, President of the Commonwealth Court of Conciliation and Arbitration, fixed an amount of £2 2s. per week for Melbourne as reasonable to meet the needs of " a family of about five." This determination is commonly referred to as the " Harvester Judgment " from the fact that it related to an application by the proprietors of the Sunshine Harvester Works that the wage paid to their employees was " fair and reasonable."

The " Harvester " standard was adopted by the Court for incorporation in its awards and the rates remained virtually unchanged until 1913. In that year the Court began to have regard to retail price index numbers the first of which, the " A " series, covering food and groceries and rent of all houses,

(1) See *Appendix.*

had recently been published by the Commonwealth Statistician. In general, the practice was to revise basic wage rates in direct proportion to variations in the retail price index. Until 1918 the Court, in computing " Harvester " equivalents, used the index numbers for the previous calendar year and, from 1918 to 1921, the figures for the next preceding four quarters.

During the period of application of this system, it was frequently contended that it failed to maintain the " Harvester " standard. Criticism became more general with the rise in prices towards the end of the first World War and led to the appointment in 1919 of a Royal Commission on the Basic Wage under the chairmanship of A. B. Piddington, K.C. The " Piddington Commission," as it came to be called, was required by its terms of reference to inquire into the actual cost of maintaining in a reasonable state of comfort a household comprising a man and his wife and three children under fourteen years of age, and also the means to be adopted for the automatic adjustment of the basic wage in order to maintain its purchasing power. The Commission presented its findings in two reports, the first of which was made in November, 1920, and the second in April, 1921. The recommendations in relation to a living wage were rejected by the Court as being so much in excess of existing wages as to cause doubt about the capacity of industry to pay such rates. The Commission's finding in regard to the automatic adjustment of the basic wage led to the creation of the " C " Series Index of Retail Prices, an index much more comprehensive in scope than the original " A " Series in that it included the additional groups Clothing and Miscellaneous Expenditure.

In 1921, the Court began to insert provisions in awards for the automatic adjustment of wages according to quarterly movements in the " A " Series index, and a loading of 3s. was added to the " Harvester " equivalent by Mr. Justice Powers to ensure that during a period of rapidly rising prices the worker would suffer no loss of real wages in the interval between the adjustment of rates.

The method of fixation and adjustment remained unaltered until the depression of the 1930's, when the Court, having satisfied itself that unfavourable economic conditions prevented the maintenance of real wages at their existing level, directed that, with certain exceptions, all wages under its jurisdiction should be reduced by ten per cent. as from the 1st February, 1931.

In its judgment of May, 1933, the Court concluded that the method of adjusting wages to conform to variations in the " A " Series index numbers had resulted in a decrease of real wages to a level below the prescribed percentage. To correct this decline, it adopted the use of the " D " Series index, derived by combining the " A " and the " C " Series indexes.

In a judgment delivered in April, 1934, the Court introduced an entirely new basis for the fixation of the basic wage. The " Harvester " standard supplemented by the Powers loading of 3s. was discarded and a fresh starting point selected. The new wage was largely founded upon a declaration of £4 4s. per week made by the New South Wales Board of Trade in August, 1925. As this amount took into consideration the upward tendency of prices, the Court regarded the rate as applicable to the year 1926. The " C " Series index number for Sydney for that year was 1033, and for the December quarter of 1933 stood at 829. Thus the 1933 equivalent in purchasing power of an amount of £4 4s. in 1926 was £3 7s., to the nearest shilling (84s. $\times$ 829 $\div$ 1,033), which became the rate applicable in Sydney from the 1st May, 1934. The equating of this wage to the index number 829 established the relationship '1,000 in the " C " Series Index = £4 1s. in the wage ' (67s. $\times$ 1,000 $\div$ 829, to the nearest shilling) and by applying the multiplier 0·081 to the " C " Series index number for any town or group of towns at any time, the wage in shillings could be readily computed. Owing to adverse industrial conditions in South Australia and Tasmania, the new rates for Adelaide and Hobart were graduated so as not to come into full operation until the 1st June, 1935. The date on which future periodical adjustments were to become operative was altered to the beginning of the first pay-period in the months of June, September, December or March, and adjustments were continued on this basis until 1939. Thereafter they took effect from the beginning of the first pay-period commencing in the months of February, May, August or November, until their abolition by the Court in its judgment of the 12th September, 1953.

The hearing of a claim by the combined unions for an increase in the basic wage was concluded in June, 1937. The Court, in fixing a new rate, transferred the basis of the adjustment of wages from the " C " Series to a special " Court " Series based upon the relationship between wages and index numbers which had been established in 1934. This Court Series was, in effect, simply a table expressing in shillings the wage rates derived by the use of the conversion factor 0·081. The Court's judgment further provided for the addition of " prosperity loadings " to the rates so derived, which came to be designated the "needs portion " of the wage. The amount of the loading applied to the " needs " wage for Sydney, Melbourne and Brisbane was 6s., for Adelaide, Perth and Hobart, 4s. and for the Six Capital Cities as a whole, 5s.

In general, the method of the 1937 judgment was retained by the Court until its "interim" decision of the 13th December, 1946 when, in granting an increase of 7s. per week in the "needs" portion of the wage, it inaugurated a Court Index (Second Series). In fixing the base of this new series, the "C" Series index number (1146) for the Six Capital Cities as a whole in the September quarter, 1946 was equated to the "needs" portion (£5) of the new Six Capitals wage. This established the base, 1000 in the "C" Series index = £4 7s. in the wage. The immediate monetary effect was to increase by 7s. per week the "needs" wage in each of the capital cities with the exception of Hobart, where the increase was 6s. The prosperity loadings were retained at their original levels.

On the application early in 1949 of certain unions seeking, among other things, an increase in the basic wage the Court, after an exhaustive examination of the Australian economy, declared a general increase of £1 per week. Judgment was delivered on the 12th October, 1950, the new rates to be operative from the first pay-period in December. The Court also introduced a Court Index (Third Series), derived by equating 1572 (the "C" Series index number for the Six Capital Cities as a whole in the September quarter, 1950) to £8 2s., the increased weighted average wage for the Six Capitals (made up of the "needs" portion £6 17s., plus a uniform prosperity loading of 5s., plus the additional £1 awarded by the Court). In this way, 1000 in the "C" Series index became equal to £5 3s. in the wage. In determining the new rate of payment, a uniform amount of £1 5s. was added to the existing "needs" basic wage, with the concurrent discontinuance of the prosperity loading as a separate entity. This had the effect of increasing the basic wage in Sydney, Melbourne and Brisbane by 19s., in Adelaide, Perth and Hobart by £1 1s., and for the Six Capital Cities as a whole by £1. From, and including, the first pay-period in February, 1951, the rates so determined were to be subject in their entirety to quarterly adjustment in accordance with movements in the Court Index (Third Series). Thus the components "needs portion" and "prosperity loading" ceased to exist as separate and distinguishable parts of the wage.

Following applications by employers' organizations requesting, among other things, "that the system of adjusting the basic wages in accordance with variations occurring in retail price index numbers be abandoned" and counter claims by employees' organizations for increases in the basic wage for adult males, the Court on the 16th September, 1952 commenced hearing evidence in what has come to be known as the "Basic Wage and Standard Hours Inquiry, 1952–53." Submission of evidence continued intermittently until the 11th September, 1953, and on the following day the Court announced its decision. The application for discontinuance of the system of adjusting the basic wages in accordance with variations in the retail price index numbers was granted but all of the other applications were refused. On the 27th October, in stating the reasons for its decisions, the Court made it clear that, as in its opinion there should be no departure from "its now well-established principle that the basic wage should be the highest that the capacity of the community as a whole can sustain" and as it had "withdrawn from relating the basic wage to the fulfilment of any particular standard of needs," the Court "finds it impossible to justify the continuance of an 'automatic' adjustment system whose purpose is to maintain the purchasing power of a particular wage (assessed with regard to the capacity of industry to pay such wage in 1950)." In consequence, the wage rates which had applied from the beginning of the first pay-period commencing in August, 1953, continued to operate.

In November, 1955, application was made to the Court by certain employees' organizations seeking an alteration of the basic wage. Among matters included in the application were requests that the wage be increased to the amount which it would have reached if automatic quarterly adjustments, discontinued since September, 1953, had continued to apply, that the wage be raised by a further £1, and that automatic quarterly adjustments be restored. In the course of the hearing the Attorney-General, in exercise of powers conferred by the Conciliation and Arbitration Act, intervened in the public interest on behalf of the Commonwealth and each of the State Governments was represented by counsel or by a State official. In its judgment, delivered on the 25th May, 1956, the Court refused the first of the unions' claims and rejected the request for the restoration of the quarterly adjustments, but granted an increase of 10s. per week in the adult male basic wage to apply from the beginning of the first pay-period commencing in June, 1956.

The next basic wage hearing commenced before the newly-constituted Commonwealth Conciliation and Arbitration Commission on the 13th November, 1956. The unions' claims were substantially the same as in the previous case except that the clause relating to an increase of £1 in the basic wage was not included. Again the Commonwealth Government intervened in the public interest and representatives of the South Australian and Victorian State Governments appeared before the Commission. In

its judgment on the 29th April, 1957, the Commission rejected the claims made by the unions and granted a uniform increase of 10s. per week in the adult male basic wage to apply from the beginning of the first pay-period commencing on or after the 15th May, 1957.

On the 18th February, 1958, the Commission began hearing an application by unions claiming that the basic wage be increased to the amount which it would have reached had the system of quarterly adjustments been retained plus an addition of 10s. per week, and that the resultant wage be subsequently varied by quarterly adjustment. The claims were opposed by the State of South Australia but Tasmania, the only other State represented, appeared in support of the unions' application. The Attorney-General of the Commonwealth intervened in the public interest. In delivering judgment on the 12th May, 1958, the Commission refused the claim for restoration of automatic quarterly adjustments but granted an increase of 5s. per week in the adult male basic wage, to come into effect from the beginning of the first pay-period commencing on or after the 21st May, 1958.

At the 1959 inquiry, which opened on the 24th February, the unions' claims were the same as those submitted in the previous year. The States of South Australia and Tasmania were again represented, South Australia opposing all the claims and Tasmania supporting those for an increase in the basic wage to the amount which it would have reached had the system of quarterly adjustments been retained and for restoration of the system. The Commonwealth Attorney-General intervened. On the 5th June, 1959 the Commission delivered judgment and granted an increase of 15s. per week in the basic wage for adult males, the new rate to operate from the beginning of the first pay-period commencing on or after the 11th June, 1959. All other claims were rejected. An application which had been made on behalf of employers in the pastoral industry seeking a reduction of £1 5s. in the basic wage payable to pastoral workers was also refused.

On the 16th February, 1960, the Commission began hearing an application by the unions for the restoration of quarterly adjustments to the basic wage and for an increase in the amount of the wage. On the six capital cities rate the increase sought was £1 2s. per week, representing an addition of 5s. to restore the real value of the wage to its 1953 level, and a further amount of 17s. being the unions' minimum estimate of the increase in productivity which had occurred since the automatic adjustment system was discontinued. The Commonwealth Government intervened and all States except New South Wales were represented. The State of South Australia opposed the unions' application. Victoria, Queensland and Western Australia, while presenting information to show how their finances would be affected by wage increases, neither supported nor opposed the claims. Tasmania supported the application for restoration of quarterly adjustments. In its judgment, delivered on the 12th April, 1960, the Commission refused the unions' application.

On the 14th February, 1961 the Commonwealth Conciliation and Arbitration Commission began hearing applications by employer and employee organizations. The employers sought an increase in standard hours of work from 40 to 42 with a concomitant increase in the weekly wage by an amount equivalent to two hours' pay at ordinary rates. The unions claimed an increase of £2 9s. in the wage on a " six capital cities " basis, and the reintroduction of automatic quarterly adjustments in accordance with movements in the " C " Series Retail Price Index. The amount claimed consisted of two components, one of £1 2s. representing the increase in productivity since 1953 and the other of £1 7s. (which was amended in the course of the hearing to £1 10s.) to cover " cost of living " increases since that time.

The Commonwealth Government, while supplying certain economic and statistical material, expressed no attitude apart from its opposition to the reintroduction of quarterly adjustments. All States except New South Wales were represented. South Australia made no submissions and called no evidence. Victoria, Queensland and Western Australia, although presenting some statistical information, neither supported nor opposed the unions' application. Tasmania supported the claim for restoration of automatic adjustments and an increase in the wage to the level indicated by the movement in the " C " Series Retail Price Index.

Judgment was delivered on the 4th July, 1961. The Commission refused the application of the employers, and the unions' claim for restoration of quarterly adjustments, and granted an increase of 12s. per week in the basic wage for adult males, to apply from the beginning of the first pay-period commencing on or after the 7th July, 1961. Among the decisions contained in the judgment was one stating, in part, that " in February next the only issue in regard to the basic wage should be why the money wages fixed as a result of our decision should not be adjusted in accordance with any change in the Consumer Price Index(†) and for the purpose of deciding that issue the Order giving effect to the decisions

(†) See letterpress *The Consumer Price Index* in Chapter X, Part 3—*Retail Prices.*

hereby announced will also provide for the adjournment of the application of the unions for increase of the basic wages under the Metal Trades Award to Tuesday, 20th February, 1962"

In accordance with this decision the adjourned hearing was held on the 20th February, 1962, when the Commission decided that " there will be no alteration in the amounts of the existing basic wages until further order of the Commission," and that " the application before the Commission is further adjourned until 19th February 1963."

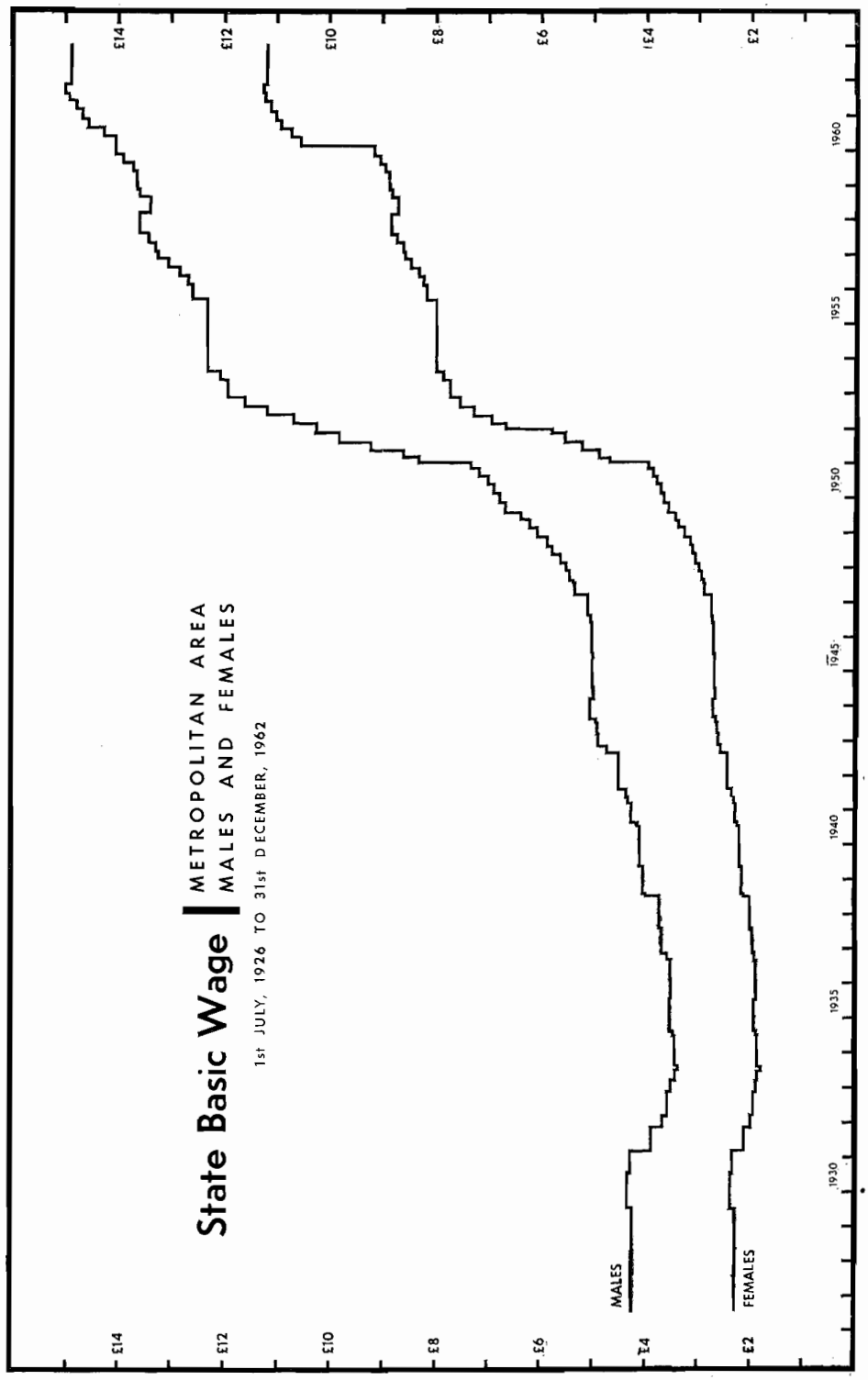
The Commission, after a sitting on the 5th February, 1963, announced that there would be no alteration in the existing basic wage rates and further adjourned the application until the 18th February, 1964.

On the 9th June, 1964, after a hearing which began on the 19th February and ended on the 14th May, the Commission gave judgment granting an increase of £1 per week in the basic wage payable to adult males from the beginning of the first pay-period commencing on or after the 19th June, 1964.

COMMONWEALTH BASIC WAGE—VARIATIONS IN RATES (†) FROM 1945

Date of Operation (*a*)	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Weighted Average Six Capital Cities
	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.
1945—							
February	4 19	4 18	4 13	4 13	4 13	4 14	4 16
May	4 18	,,	,,	,,	,,	4 13	,,
August	,,	,,	,,	,,	4 14	,,	,,
November	4 19	,,	,,	,,	,,	4 14	,,
1946—							
February	,,	,,	,,	4 14	,,	4 15	,,
May	,,	,,	4 14	,,	,,	,,	4 17
August	5 0	4 19	,,	4 15	4 15	4 16	4 18
November	5 1	,,	,,	,,	,,	4 17	,,
December	5 8	5 6	5 1	5 2	5 2	5 3	5 5
1947—							
February	,,	5 7	5 3	,,	5 3	5 4	5 6
May	5 10	,,	5 4	5 3	,,	,,	,,
August	,,	5 8	,,	5 4	5 4	5 5	5 7
November	5 12	5 9	5 5	5 6	5 6	5 7	5 9
1948—							
February	5 14	5 13	5 7	5 8	5 7	5 10	5 11
May	5 16	5 15	5 10	5 11	5 10	5 12	5 14
August	6 0	5 17	5 13	5 14	5 12	5 15	5 16
November	6 2	6 0	5 15	5 16	5 16	5 18	5 19
1949—							
February	6 4	6 3	5 18	5 19	5 18	6 1	6 2
May	6 7	6 5	5 19	6 1	6 0	6 4	6 4
August	6 10	6 8	6 2	6 4	6 6	6 7	6 7
November	6 12	6 10	6 5	6 6	6 9	6 8	6 9
1950—							
February	6 15	6 14	6 7	6 9	6 11	6 11	6 13
May	6 18	6 17	6 9	6 11	6 13	,,	6 15
August	7 2	7 0	6 12	6 14	6 16	6 15	6 18
November	7 6	7 3	6 15	6 17	6 19	6 19	7 2
December	8 5	8 2	7 14	7 18	8 0	8 0	8 2
1951—							
February	8 13	8 10	7 19	8 6	8 6	8 5	8 9
May	9 0	8 17	8 6	8 11	8 16	8 13	8 16
August	9 13	9 9	8 15	9 4	9 8	9 7	9 9
November	10 7	9 19	9 5	9 15	9 17	9 19	10 0
1952—							
February	10 16	10 9	9 19	10 5	10 5	10 8	10 10
May	11 3	10 12	10 7	10 11	10 14	10 14	10 16
August	11 15	11 4	10 13	11 4	11 2	11 2	11 7
November	11 17	11 8	10 16	11 9	11 8	11 10	11 11
1953—							
February	11 18	11 9	10 15	11 5	11 9	11 12	,,
May	12 1	11 12	10 17	11 8	11 11	11 19	11 14
August	12 3	11 15	10 18	11 11	11 16	12 2	11 16
1956—							
June	12 13	12 5	11 8	12 1	12 6	12 12	12 6
1957—							
15th May	13 3	12 15	11 18	12 11	12 16	13 2	12 16
1958—							
21st May ...	13 8	13 0	12 3	12 16	13 1	13 7	13 1
1959—							
11th June ...	14 3	13 15	12 18	13 11	13 16	14 2	13 16
1961—							
7th July	14 15	14 7	13 10	14 3	14 8	14 14	14 8
1964—							
19th June	15 15	15 7	14 10	15 3	15 8	15 14	15 8

(†) The rates shown apply to adult male workers. From December, 1950 the basic wage for adult females has been fixed at 75 per cent. of the male rate ; previously it had ranged from 54 per cent. up to 75 per cent. of the male rate.
(*a*) Prior to 1957 rates operative from beginning of first pay-period commencing in the month shown ; from 1957, operative from beginning of first pay-period commencing on or after the date shown.


State Basic Wage
METROPOLITAN AREA
MALES AND FEMALES
1st JULY, 1926 TO 31st DECEMBER, 1962
£14
£12
£10
£8
£6
£4
£2
£3
1930
1935
1940
1945
1950
1955
1960
MALES
FEMALES

State Basic Wage

Under the provisions of an amendment of 1925 to the Industrial Arbitration Act, 1912, the State Court of Arbitration was required to declare a basic wage annually, to operate from the 1st July in each year. In 1930, the Court was empowered by another amendment to the Act to adjust the annual declaration each quarter in consonance with " the variation (if any) in the cost of living." A further amendment in 1950 removed the Court's obligation to make an annual declaration and gives the Court discretion to make basic wage determinations at any time, provided that such reviews are at intervals of not less than twelve months. The provision for quarterly adjustments was retained. Basic wage determinations of the Court are automatically applicable and thus become the minimum wage permissible by law to be paid to all male and female workers who are covered by industrial awards made by the State Court or by agreements registered with the Court and to those who come within the provisions of the Factories and Shops Act.

The first decision of the Court took effect on the 1st July, 1926, and prescribed a rate of £4 5s. for males and £2 5s. 11d. (or 54 per cent. of the male rate) for females throughout the whole of the State. In fixing the male rate, the Court divided the wage into four elements and allowed such amounts for each as to meet the requirements of a family unit of four, comprising a man, his wife and two children. For Food and Groceries the amount was the equivalent of the Piddington Commission's standard but reduced to provide for a family unit of four ; for Rent, the average rental of four and five roomed houses ; for Clothing, an amount approximating the sum fixed for such expenditure by the New South Wales Board of Trade in 1925, and for Miscellaneous Expenditure, an amount based on the Piddington Commission's findings.

These rates remained unaltered until the 1st July, 1929, when the amounts were increased to £4 7s. and £2 7s. respectively, with the exception of certain specified goldfields areas for which the previous wage was retained.

A revision by the Court following the 1930 inquiry resulted in the declaration of a separate wage for the metropolitan area of £4 6s. for males and £2 6s. 5d. for females. In this connexion, the metropolitan area is the area comprised within a radius of 15 miles from the General Post Office, Perth. Rates for all other parts of the State were fixed at £4 5s. and £2 5s. 11d. respectively.

Additional power was given to the Court under the provisions of the Industrial Arbitration Act Amendment Act, 1930, to enable quarterly adjustments to be made to the rates fixed by the annual declaration and, on the 3rd March, 1931, rates of £3 18s. for males and £2 2s. 2d. for females were prescribed for the metropolitan area, and of £3 17s. and £2 1s. 8d. for all other parts of the State. The Court is empowered to make such quarterly adjustments only when a rise of one shilling or more per week is indicated in the " cost of living."

The annual declaration operative from the 1st July, 1931, did not vary these amounts, but a further quarterly adjustment on the 18th August, 1931, marked the inauguration of a separate wage for agricultural areas, which are taken to be those areas, other than the Court's metropolitan area, contained within the official South-West Land Division as described in the Land Act.

In 1938 an inquiry, which was the most comprehensive since the original declaration, gave special consideration to the factors of national income and standards of nutrition and as a result wage levels throughout the State were considerably increased from the 1st July in that year. The Rent and Miscellaneous Expenditure elements of the wage were based on the existing standards but Clothing was based on the Piddington standard, reduced to provide for a family unit of four, and Food and Groceries on the Piddington standard plus an amount of 1s.

Subsequent annual declarations until 1942 maintained in purchasing power the standard of the 1938 judgment.

At a sitting of the Court held on the 26th February, 1942, to consider the quarterly adjustment of the basic wage, the Court decided that, under the existing economic conditions, there should be no alteration to the rates then in force. This decision marked the first occasion upon which the Court, in the exercise of the discretionary powers conferred upon it under the Act, had refrained from making a quarterly adjustment to the wage to equate its purchasing power to the standards of the relevant annual declaration. It was followed by a similar decision given on the 29th April, 1942, when the Court reaffirmed that no adjustment should be made to existing rates, despite further increases in retail prices.

On the 11th June, 1942, the Court, in its annual declaration, adopted as its new base the rates which had operated since the 28th July, 1941, and these remained in force until the 8th August, 1942, when they were superseded in terms of a Basic Wage Adjustment Order made by the Premier under the authority

STATE BASIC WAGE—VARIATIONS IN RATES FROM 1947 (*a*)

Date of Operation	Metropolitan Area (*b*)		South-West Land Division (*b*)		Goldfields Areas and other parts of State	
	Males	Females	Males	Females	Males	Females
1947—	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
4th February (*c*)	5 2 1	2 15 1	5 1 6	2 14 10	5 10 4	2 19 7
26th February	5 7 1	2 17 10	5 6 6	2 17 6	5 15 4	3 2 3
‡1st July	5 7 10	2 18 3	5 7 3	2 17 11	5 16 0	3 2 8
23rd July	5 9 3	2 19 0	5 8 9	2 18 9	5 17 6	3 3 5
30th October	5 10 9	2 19 10	5 10 6	2 19 8	5 19 0	3 4 3
1948—						
2nd February	5 12 9	3 0 11	5 12 6	3 0 9	6 1 4	3 5 6
26th April	5 15 9	3 2 6	5 15 2	3 2 2	6 4 9	3 7 4
‡1st July	,,	,,	,,	,,	,,	,,
26th July	5 17 5	3 3 5	5 17 1	3 3 3	6 5 10	3 7 11
1st November	6 1 7	3 5 8	6 1 3	3 5 6	6 9 6	3 9 11
1949—						
9th February	6 4 9	3 7 4	6 4 4	3 7 2	6 12 9	3 11 8
2nd May	6 7 1	3 8 8	6 6 9	3 8 5	6 15 1	3 12 11
‡1st July	,,	,,	,,	,,	,,	,,
21st July	6 13 2	3 11 11	6 12 11	3 11 9	7 0 5	3 15 10
24th October	6 15 11	3 13 5	6 15 4	3 13 1	7 2 11	3 17 2
1950—						
31st January	6 18 1	3 14 7	6 17 4	3 14 2	7 4 8	3 18 1
1st May	7 0 0	3 15 7	6 19 9	3 15 6	7 7 3	3 19 6
31st July	7 3 6	3 17 6	7 3 3	3 17 4	7 11 6	4 1 10
23rd October	7 6 6	3 19 1	7 6 7	3 19 2	7 14 8	4 3 6
18th December (*d*)	8 6 6	4 14 1	8 6 7	4 14 2	8 14 8	4 18 6
1951—						
29th January	8 12 11	4 17 9	8 12 11	4 17 9	9 0 5	5 1 9
30th April	9 4 3	5 4 1	9 4 1	5 4 1	9 8 5	5 6 3
23rd July	9 16 8	5 11 1	9 15 9	5 10 8	10 1 6	5 13 8
22nd October	10 5 8	5 16 3	10 4 7	5 15 8	10 10 11	5 18 11
1st December (*e*)		6 13 8		6 13 0		6 17 1
1952—						
29th January	10 14 1	6 19 2	10 13 8	6 18 11	10 19 8	7 2 9
28th April	11 3 10	7 5 6	11 2 5	7 4 7	11 8 10	7 8 9
28th July	11 12 3	7 11 0	11 12 5	7 11 1	11 18 0	7 14 8
27th October	11 18 6	7 15 0	11 19 2	7 15 6	12 4 2	7 18 9
1953—						
27th January	,,	,,	12 0 6	7 16 4	12 5 9	7 19 9
27th April	12 1 10	7 17 2	12 3 0	7 17 11	12 7 9	8 1 0
27th July	12 6 6	8 0 3	12 6 0	7 19 11	12 9 4	8 2 1
1955—						
9th August	12 12 5	8 4 1	12 11 8	8 3 7	12 14 1	8 5 2
1956—						
31st January	12 13 8	8 4 11	12 13 11	8 5 0	12 15 11	8 6 4
23rd April	12 17 1	8 7 1	,,	,,	,,	,,
23rd July	13 1 6	8 10 0	12 18 10	8 8 3	12 18 10	8 8 3
29th October	13 5 2	8 12 4	13 2 11	8 10 11	13 2 8	8 10 9
1957—						
25th January	13 6 3	8 13 1	13 6 5	8 13 2	13 6 7	8 13 3
26th April	13 8 10	8 14 9	,,	,,	,,	,,
19th July	13 12 9	8 17 3	13 9 11	8 15 5	13 7 10	8 14 1
28th October	,,	,,	13 11 5	8 16 5	13 6 7	8 13 3
1958—						
7th February	13 8 6	8 14 6	13 10 1	8 15 7	,,	,,
28th April	,,	,,	13 11 2	8 16 3	13 8 0	8 14 2
4th August	13 12 3	8 17 0	13 13 4	8 17 8	13 9 9	8 15 4
27th October	13 13 5	8 17 9	,,	,,	13 11 6	8 16 6
1959—					,,	,,
27th April	13 15 1	8 18 10	13 14 6	8 18 5	13 13 6	8 17 9
27th July	13 18 7	9 1 1	13 17 5	9 0 4	13 17 4	9 0 3
26th October	14 1 6	9 3 0	14 1 3	9 2 10		10 8 0
1960—						
30th January (*f*)		10 11 2		10 10 11	13 18 10	10 9 2
2nd May	14 6 4	10 14 9	14 3 1	10 12 4	14 5 11	10 14 5
25th July	14 12 3	10 19 2	14 9 2	10 16 11	14 7 1	10 15 4
24th October	14 14 7	11 0 11	14 12 0	10 19 0		
1961—						
31st January	14 16 7	11 2 5	14 15 0	11 1 3	14 9 5	10 17 1
1st May	14 19 3	11 4 5	14 17 8	11 3 3	14 12 0	10 19 0
31st July	15 0 6	11 5 5	14 18 11	11 4 2	14 13 2	10 19 11
30th October	14 18 9	11 4 1	14 17 3	11 2 11	14 11 6	10 18 8
1963—						
22nd April	15 0 3	11 5 2	14 18 8	11 4 0	14 12 11	10 19 8
29th July	15 1 6	11 6 1	14 19 11	11 4 11	14 14 1	11 0 7
1964—						
27th April	15 4 2	11 8 2	15 2 7	11 6 11	14 16 8	11 2 6

(*a*) A table showing variations from inception in 1926 to the end of 1958 appears on pages 362-3 of the *Official Year Book of Western Australia*, 1960, *No.* 2—*New Series*. (*b*) See letterpress on page 391. (*c*) Beginning of next succeeding pay-period. (*d*) Special determination incorporating increase of £1 for males and 15s. for females. (*e*) Female rate increased to 65 per cent. of male rate. (*f*) Female rate increased to 75 per cent. of male rate from beginning of next succeeding pay-period. ‡Annual declaration.

of National Security (Economic Organization) Regulations. The rates established under this Order were substantially the current equivalents of the standards adopted by the Court in its annual declarations from 1938 to 1941.

On the 30th October, 1942, these standards were readopted by the Court for the purposes of the quarterly adjustments and continued to apply until the Interim Basic Wage Declaration of the 26th February, 1947. In this declaration, made under powers conferred by an amendment in December, 1946, to National Security (Economic Organization) Regulations, the basic wage was increased by a loading of 5s. This loading was varied proportionately to the remainder of the basic wage in subsequent declarations and quarterly adjustments.

An amendment of 1950 to the Industrial Arbitration Act removed the Court's obligation to make annual declarations, empowers it to make basic wage determinations at any time during the year at intervals of not less than twelve months, subject only to quarterly adjustments, and requires that in such determinations the Court must give due consideration to the economic capacity of industry to pay any proposed increase in the basic wage.

Consequent on the judgment of the Commonwealth Court on the 12th October, 1950, the State Court declared a new wage, incorporating an increase of £1 for males and 15s. for females and consolidating the four elements and the loading previously mentioned, to have effect from the 18th December, 1950. This meant that the concept of a composite wage, which had applied since the initial declaration in 1926, was now abandoned. It also decided in January, 1951, that any quarterly adjustments should be based on variatiens in the " C " Series Retail Prices Index Numbers. On the 28th November, 1951, the Court raised the basic wage for females from 54 per cent. of the male rate to 65 per cent., the new rates to operate from the 1st December, 1951.

On the 13th November, 1953, the Court again exercised its discretionary powers, conferred by Section 127 of the Act, and determined that no change should be made in the basic wage, although there had been an appreciable increase in the " C " Series Retail Prices Index. This decision governed subsequent determinations until the 9th August, 1955, when the Court reverted to the practice of making quarterly adjustments.

On the 30th January, 1960 the Court raised the basic wage for females from 65 per cent. to 75 per cent. of the male wage, the new rates to operate from the beginning of the next succeeding pay-period.

In determining the quarterly adjustments to basic wage rates to apply from the 1st May, 1961, the Court for the first time used the Consumer Price Index instead of, as formerly, the " C " Series Retail Price Index, which was last compiled for the December quarter of 1960.

The Western Australian Industrial Commission came into operation on the 1st February, 1964. The Industrial Arbitration Act, 1912-1963 requires that basic wage determinations shall be made by the Commission in Court Session. The Commission so constituted made its first adjustment to the basic wage on the 27th April, 1964, when it prescribed increased rates to apply on and from that date.

MINIMUM RATES OF WAGE

The basic wage, as the term implies, establishes a " base " to which additions may be made to provide rates actually payable in certain industries and occupations and in particular areas. Minimum rates, incorporating these additional payments, may be prescribed by awards of the Commonwealth Conciliation and Arbitration Commission or of the State authority or may be negotiated by industrial agreement. These agreements are registered with the appropriate arbitration authority and are binding upon the parties.

It is estimated that, in May, 1963, awards, determinations and registered agreements of the Commonwealth authority applied to 13·3 per cent. of male and 14·8 per cent. of female workers in Western Australia, and of the State Court of Arbitration to 76·5 per cent. of male and 74·4 per cent. of female workers.

The additions made to the basic rate are principally margins for skill which vary according to the occupation or craft of workers to whom they apply. In general, the labourer receives no such margin, and the margin increases with the degree of training and experience necessary for the satisfactory performance of a particular operation. Clothing allowances are frequently paid to employees who are handling destructive or corrosive materials or who are required to work in excessively dirty situations. A tool allowance is often provided, as in the case of carpenters, cabinetmakers and painters. Some awards prescribe the payment of a district allowance to workers in uncongenial climates or in areas where amenities are lacking. Noxious trades sometimes carry a specific loading. " Service money " is payable,

under some awards, to workers who have had a specified period of service in a particular industry. An " industry allowance " is paid to gold-mining workers. Further examples of special allowances are those paid to employees working in a confined space or at heights or in excessively wet conditions.

The following table shows the minimum rates of wage payable at the 31st December, 1962, to adult workers in a selection of industries and occupations. The data have been extracted from a much more comprehensive list appearing in the *Quarterly Statistical Abstract* and in Part VI of the *Statistical Register*. The rates relate generally to a full week's work of 40 hours excluding overtime.

MINIMUM RATES OF WAGES PAYABLE TO ADULT WORKERS UNDER AWARDS OF ARBITRATION AUTHORITIES AND INDUSTRIAL AGREEMENTS AS AT 31st DECEMBER, 1962

Rates relate generally to the metropolitan area and are shown to the nearest penny

Industry and Occupation	Wages
	£ s. d. Per week
AGRICULTURAL, PASTORAL AND DAIRYING—	
Farming—	
Farm worker	15 3 3
Pastoral Workers—	
Machine shearer	Per 100
Flock sheep	8 6 6
Rams	16 13 0
	Per week
Wool presser	28 15 5
Wool shed hand	25 12 3
BUILDING—	
Carpenter, Joiner	22 0 7
Bricklayer, Rubble waller	21 17 7
Stonemason	21 13 1
Painter, Signwriter	21 14 10
Plasterer	21 17 10
Plumber	21 19 1
CARTING AND CARRYING—	
Motor wagon driver	
Vehicle 25 cwt. or less	17 4 9
Vehicle over 25 cwt. and up to 3 tons	17 17 9
Vehicle over 3 and up to 6 tons	18 10 3
CLEANING, CARETAKING, ETC. (BUILDINGS)—	
Caretaker (male)	18 16 9
Cleaner (male)	16 10 9
Cleaner (female)	12 6 1 to 12 9 1
Lift attendant (male)	15 19 3
Window cleaner (male)	16 19 3
CLERICAL—	
Wholesale and Retail Trading—	
Senior clerk	19 14 9
Clerk (male)	16 11 3 to 18 18 9
Clerk (female)	13 4 1 to 13 14 1
HAIRDRESSING—	
Hairdresser (male)	18 2 9
Hairdresser (female)	11 15 11
HOSPITALS (GOVERNMENT)—	
Matron—	
Less than 5 beds	20 16 1
5 and less than 10 beds	22 1 7
10 and less than 20 beds	23 5 7
20 and less than 50 beds	24 8 7
50 and less than 100 beds	26 16 7
Sister in charge	18 17 7 to 19 10 7
Sister	17 12 1 to 18 5 1
Junior sister	16 13 1 to 16 19 1
Wardsmaid, Kitchenmaid	12 4 1
Orderly	16 8 3 to 16 14 9
HOTELS, HOSTELS—	
Barman, Barmaid	18 2 9
Cook (male)	16 17 3 to 18 15 9
Cook (female)	13 2 7 to 15 1 1
Waiter	16 4 3
Waitress	12 9 7
MANUFACTURING—	
Treatment of Non-Metalliferous Mine and Quarry Products—	
ASBESTOS-CEMENT GOODS :	
Sheet machine driver, Magnani machine operator	17 11 3
Moulder	16 11 9 to 16 17 3
CEMENT GOODS :	
Block making	
Mixer, Block machine operator	17 13 9
Pipe making	
Moulder	17 4 3
Wiredrawer	17 1 9
Tile making	
Hand presser, Ridge maker	17 1 9
CEMENT WORKS :	
Miller	17 3 9
Burner	18 12 9
FIBROUS PLASTER AND PLASTER GOODS :	
Bench hand	19 19 3
Fixer	20 7 3
LIMEWORKS :	
Dayfirer, Lime bagger, Crusher	15 13 9
Bricks, Pottery, Glass, etc.—	
BRICKWORKS :	
Burner	17 6 3 to 17 15 9
Moulder and presser	18 2 9
GLASS WORKERS :	
Glass beveller and silverer	19 14 9
Leadlight glazer	19 14 9
PIPE AND TILE WORKS :	
Burner	17 10 9
Moulder, Presser, Trap maker	17 3 3
Chemicals, Dyes, Explosives, Paints, Oils, Grease—	
OIL REFINING :	
Plant attendant, leading hand	22 1 3
Plant attendant, first class	20 19 3
Plant attendant, second class	19 15 9
Storeman	17 11 3
SOAP FACTORIES :	
Soap crutcher	16 11 9
Tallow man, Soap cutter	16 8 9
Industrial Metals, Machines, Implements and Conveyances—	
AGRICULTURAL IMPLEMENT MAKING :	
Assembler	16 10 3 to 17 3 9
Fitter	17 16 3 to 18 2 9

MINIMUM RATES OF WAGES AT 31st DECEMBER, 1962—*continued*

Industry and Occupation	Wages £ s. d. Per week
MANUFACTURING—*continued*	
Industrial Metals, Machines, Implements, and Conveyances—*continued*	
AIRCRAFT WORKERS :	
Repair, Maintenance and Servicing Section—	
Ground engineer, Aircraft mechanic	
Holding prescribed certificates	20 5 6 to 21 6 0
Holding no certificate	19 4 0
COACHBUILDING :	
Coachsmith, General smith, Farrier, Wheelwright smith, Spring maker, Bodymaker, Panel beater	19 14 9
Welder	16 10 9 to 19 14 9
Wheelwright, Wheelmaker, Painter, Spray painter, Trimmer, Grainer, Seatmaker, Signwriter	19 5 3
ENGINEERING :	
Blacksmith, Fitter, Turner	19 14 9
Patternmaker	21 3 9
Toolmaker	20 13 9
Motor mechanic	19 14 9
Electrical fitter, Armature winder	19 14 9
Electrical installer	19 5 3
SHEET METAL WORKING :	
Bench hand, first class	19 14 9
Canister maker	16 17 3
WIRE MAKING :	
Galvaniser	15 18 9
Barbed wire maker	15 9 3
Annealer	15 8 9
Precious Metals, Jewellery, Plate—	
JEWELLERS, WATCHMAKERS :	
Jeweller, Engraver, Setter	19 14 9
Watchmaker, Clockmaker	19 18 9
Textiles and Textile Goods (including Knitted Goods)—	
BAG AND SACK MAKING :	
Floor hand (female)	11 11 7
Machinist, Hand cutter (female)	12 6 7
Machinist (male)	16 8 9
KNITTING :	
Mechanic	17 18 9
Machine attendant, Presser (male)	16 6 9
Female worker	11 12 1
TEXTILES MAKING :	
Combing	
Assistant foreman	18 13 0
Other male worker	16 11 0 to 17 2 6
Female worker	11 0 0 to 12 0 6
Drawing, Spinning, Twisting and Winding	
Assistant foreman	18 13 0
Other male worker	15 14 6 to 17 2 6
Female worker	11 0 0 to 12 0 6
Warping	
Assistant foreman	18 13 0
Other male worker	15 19 6 to 17 4 0
Female worker	11 0 0 to 12 7 0
Weaving	
Assistant foreman	19 6 0
Other male worker	15 14 6 to 18 19 6
Female worker	11 0 0 to 12 18 6

Industry and Occupation	Wages £ s. d. Per week
MANUFACTURING—*continued*	
Skins and Leather (not Clothing or Footwear)—	
SADDLERY AND LEATHER WORKING :	
Journeyman	17 9 9 to 18 9 3
Journeywoman	12 6 7
TANNING :	
Currier	19 3 6
Table hand	17 3 6 to 17 12 6
WOOLSCOURING :	
Woolscourer in charge of machine	18 7 9
Other worker	17 13 3
Clothing (excluding Knitted)—	
BOOT AND SHOE MAKING :	
Journeyman	17 8 6
Journeywoman	12 3 6
Repairer	18 2 9
CLOTHING, MEN'S (READY-MADE) :	
Cutter	19 9 6
Tailor	19 3 0
Trimmer, Fitter-up (female)	18 7 6
Journeywoman	11 3 0 to 18 7 6
DRESSMAKING (ORDER) :	
Cutter (male)	20 6 0
Cutter (female)	16 13 0
Head of a table (male)	19 11 0
Machinist (male)	18 7 6
Journeywoman	11 3 0 to 13 8 0
DRESSMAKING (READY-MADE) :	
Cutter (male)	19 9 6
Cutter (female)	13 8 0
Tailor	19 3 0
Machinist (male)	18 7 6
Journeywoman	11 3 0 to 13 8 0
TAILORING, MEN'S (ORDER) :	
Cutter	21 0 0
Trimmer, Fitter-up, Presser	18 7 6
Journeywoman	11 3 0 to 18 7 6
Food, Drink and Tobacco—	
AERATED WATER AND CORDIAL MAKING :	
Cordial maker	17 17 3
Bottler	15 18 9
BAKING :	
Foreman in charge	21 11 3 to 21 19 9
Single hand baker, Doughmaker	21 2 9
Bread carter	16 12 9
Bread carter in charge of motor vehicle	17 2 9
BREWING :	
Leading hand	19 10 9
Bottle washer, Cask washer, Packer, Sorter, Corker, Wirer, Labourer	18 5 3
BUTTER MAKING :	
Butter maker	18 0 3
Cream grader	18 2 3
Factory hand	15 18 9
CHEESE MAKING :	
Cheese maker	18 0 3
Factory hand	15 18 9
FLOUR MILLING :	
Foreman miller	22 0 0
Shift miller, Rollerman	19 12 0 to 22 0 0
Wheat sampler	17 18 0
HAM AND BACON CURING :	
Leading man	19 8 3
Trimmer	17 4 9 to 18 5 9

MINIMUM RATES OF WAGES AT 31st DECEMBER, 1962—*continued*

Industry and Occupation	Wages
MANUFACTURING—*continued*	£ s. d.
Food, Drink and Tobacco—*continued*	Per week
ICE MAKING AND COLD STORAGE :	
Leading hand	17 0 3
Puller, Stacker, Packer	16 10 9
ICE-CREAM MAKING :	
Freezing machine operator	16 6 3 to 16 19 3
Cone and wafer machine hand	16 15 9
JAM MAKING, FRUIT AND VEGETABLE CANNING :	
Leading hand	16 19 9
Syrup maker, Jam boiler, Retort attendant	15 19 3
MILK PROCESSING :	
Tester, Grader	17 9 3
Pasteurizer	16 8 3
Man in charge of bottling machine	16 0 3
PASTRY COOKING :	
Pastrycook (male)	19 2 9 to 19 16 9
Pastrycook (female)	13 14 1
SUGAR REFINING :	
Raw Sugar	
Mechanical equipment operator	19 0 9
Melting house	
Fugal washer	16 16 9
Refined Sugar	
Drier, Grader	16 16 9
Sawmilling, Woodworking and Basketware	
BOX AND CASE MAKING :	
Sawyer	16 13 9 to 18 4 9
Machinist	16 8 9
Case maker	16 8 9
SAWMILLING :	
Faller	18 10 9
Saw doctor	20 12 3
Sawyer, Benchman	16 4 3 to 19 13 3
Tractor driver	19 3 9
TIMBER YARDS :	
Buzzer	16 5 9 to 19 4 9
Moulding machinist	16 15 9 to 19 4 9
Sawyer, Benchman	16 5 9 to 19 14 9
Tenoner	16 5 9 to 19 4 9
Furniture, Bedding, etc.—	
Cabinetmaker, Chairmaker	19 14 9
Wood carver, Upholsterer, French polisher	19 14 9
Paper, Stationery, Printing, Bookbinding, etc.—	
PRINTING (JOBBING) :	
Machine compositor	20 13 0
Proof reader and reviser	19 13 6
PRINTING (NEWSPAPERS) :	
Machine Compositor	
Night	29 10 9
Day	27 3 3
General hand	
Night	22 18 3
Day	20 10 9
Miscellaneous Products—	
DENTAL :	
Dental technician (male)	19 14 9
Dental technician (female)	13 0 1

Industry and Occupation	Wages
MANUFACTURING—*continued*	£ s. d.
Miscellaneous Products—*continued*	Per week
OPTICAL :	
Optical mechanic	18 18 9
Leading hand	19 13 9 to 21 3 9
RADIO AND TELEVISION :	
General serviceman	19 14 9
Antenna and television installer	17 18 9
Heat, Light and Power—	
ELECTRIC LIGHT WORKS :	
Turbine driver	20 7 9
Auxiliary plant attendant	18 12 9
GAS WORKS :	
Retort operator in charge	19 0 9
Service layer, Main layer	17 6 9
MINING—	
Coal—	Per shift (*a*)
Miner	3 9 8
Loaderman (mechanical units)	3 19 1
Faceman, Shiftman (mechanical units)	3 14 9
Gold—	Per shift (*b*)
Rock-drill man	3 14 11 to 4 0 4
Hand miner	3 10 10 to 3 16 2
Shaft-timber man	4 0 4
QUARRYING—	Per week
Spaller, Man barring down, Machine man	16 15 3
Crusher feeder	17 3 9
Powder monkey	17 14 3
RAILWAYS (GOVERNMENT)—	Per shift (*c*)
Engine driver	3 18 11 to 4 14 4
Fireman	3 5 10 to 3 13 2
Trainee engineman	3 3 4
Guard	3 12 10 to 3 19 9
Porter	3 3 4 to 3 8 4
RETAIL TRADE—	Per week
Shop assistant (male)	18 2 9
Shop assistant (female)	13 4 1
Storeman	17 14 9
STEVEDORING—	Per hour
Lumper handling general cargo	0 11 7
TRANSPORT (PASSENGER)—	Per week
Omnibus driver	18 18 9
Articulated vehicle driver	19 15 3
Conductor	16 7 9 to 17 6 9
Body builder	19 14 9
Painter	19 5 3
Greaser	17 6 9
Fare collector (female)	12 11 1
WOOL STORES—	
Head classer, Man in charge of store	20 14 9
Assistant classer	19 10 9
Wool sorter	18 18 9

(*a*) Eleven shifts each fortnight; ten of 7 hours and one of 5 hours. (*b*) Five 7½-hour shifts per week. (*c*) Five 8-hour shifts per week.

WAGE AND SALARY PAYMENTS

The figures shown in the following table under the heading " Wages, Salaries and Supplements " comprise payments in the nature of wages and salaries as defined for Pay-roll Tax purposes, including allowances for income in kind (board and quarters, etc.), together with supplements to wages and pay and allowances of members of the forces. In addition to wages and salaries paid by employers subject to Pay-roll Tax, they include wages and salaries paid by employers not subject to Pay-roll Tax, based on estimates of employment and average earnings. Supplements consist of employers' contributions to pension and superannuation funds, direct payments of pensions and retiring allowances, and amounts paid as workers' compensation for injuries. Pay and allowances of members of the forces consist of active pay, field allowances, subsistence allowances, dependants' allowances and the value to the members of the forces of food, clothing, normal medical attention, etc., supplied in kind. Deferred pay is included.

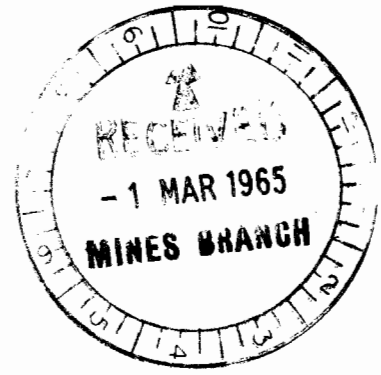
Statistics of " average weekly earnings per employed male unit " are derived from particulars of employment and wages and salaries recorded on Pay-roll Tax returns, from other direct collections and from estimates of the unrecorded balance. Pay of members of the forces is not included. Male units represent total male employment plus a proportion of female employment based on the approximate ratio of female to male earnings. It is important to bear in mind, in reading the table, that the figures shown as " average weekly earnings per employed male unit " relate therefore to the total wage and salary earner field and comprise payments to all grades of employees throughout the State from junior workers to persons at the highest levels of executive and administrative activity. Overtime earnings, over-award and bonus payments are included, as well as payments made in advance or retrospectively during the years shown.

Particulars of basic wage rates applying to adult male workers in the metropolitan area are shown in the table to provide a summary of trend in those rates during the same period.

WAGES, SALARIES AND SUPPLEMENTS; AVERAGE WEEKLY EARNINGS AND BASIC WAGE RATES

Period	Wages, Salaries and Supplements	Average Weekly Earnings per Employed Male Unit	Basic Wage Rates Metropolitan Area—Adult Male Workers			
			Commonwealth Basic Wage		State Basic Wage	
			At End of Period	Average for Period	At End of Period	Average for Period
Year ended 30th June :—	£ million	£	£	£	£	£
1958	182·5	*18·11	13·05	12·83(*a*)	13·43	13·54
1959	186·7	*18·31	13·80	13·09(*b*)	13·75	13·65
1960	204·0	*19·61	13·80	13·80	14·32	14·06
1961	219·6	20·77	13·80	13·80	14·96	14·74
1962	230·3	21·51	14·40	14·39(*c*)	14·94	14·96

(*a*) Variation (increase of 5s.) assumed to have operated on and from 21st May, 1958. (*b*) Variation (increase of 15s.) assumed to have operated on and from 11th June, 1959. (*c*) Variation (increase of 12s.) assumed to have operated on and from 7th July, 1961. * Revised.



CHAPTER X — *continued*

PART 3 — RETAIL PRICES

Prices of a limited range of commodities are recorded in the Blue Books of Western Australia from the early years of settlement. It was not until 1911, however, that a systematic collection of retail prices statistics, undertaken by the Commonwealth Statistician, was begun. The results of this inquiry were published in 1912 and thus, for the first time, particulars of retail prices in a selection of Western Australian towns became available. As well as providing data for each of five principal towns for the year 1911, the published information contained particulars for the capital city for each year from 1901 to 1910, the scope of the investigation having been specially extended for this purpose. The 46 commodities included in the collection, in addition to house rent, comprised a representative range of groceries, dairy produce and meat. The field of collection was later expanded to cover other groups of household expenditure.

Prices are now collected regularly for items of food ; clothing and drapery ; housing ; household supplies and equipment ; and miscellaneous commodities and services.

Representative and reputable retailers and service establishments are selected for each class of commodity and each service. These informants furnish regular returns of prices. Whenever necessary, particulars of prices are also obtained from other firms. For food items, prices are collected monthly, as at the 15th of each month, and are averaged for the three months of the quarter. For most other items prices are obtained quarterly as at the 15th of the middle month of the quarter. In general, prices are collected from actual vendors at retail selling outlets. The prices are those actually being charged for normal cash purchases of new articles. " Bargain " or " sale " prices of imperfect goods or discontinued lines are not used.

The information is collected, under authority of the Census and Statistics Act 1905–1949, for specified " standards " of the commodities and services priced. Specifications include the unit of quantity to be priced, the grade, quality, size, style, etc., and in some cases the particular brand and the manufacturer's " line " number. The standards selected are those with a considerable volume of sales and likely to remain representative over a long period.

The items and standards priced are revised from time to time to keep them in harmony with changing conditions. Before each quarterly collection the standards of all items are reviewed after extensive inquiries among manufacturers, wholesalers and retailers. Where changes in the items or standards priced become necessary, suitable adjustments are made in compiling price series to ensure that they reflect only changes in prices for representative goods of constant quality and not differences in prices of differing standards.

The actual collection of information is carried out by specially qualified field officers of the Commonwealth Bureau of Census and Statistics, who not only receive and check returns but visit the shops or other establishments concerned.

The following tables show the annual average retail prices of 39 items of groceries, dairy produce and meat in the metropolitan area for each of the five years from 1958 to 1962.

AVERAGE RETAIL PRICES OF GROCERIES—METROPOLITAN AREA

Commodity	Unit	1958	1959	1960	1961	1962
		pence	pence	pence	pence	pence
Bread (*a*)	2 lb.	16·00	16·50	17·21	18·00	18·00
Flour, plain	„	13·75	13·72	13·75	14·50	14·03
„ self-raising	„	20·43	20·79	21·77	22·44	22·20
Tea	lb.	78·29	77·10	75·00	76·28	74·34
Sugar	„	10·00	10·00	10·60	10·99	10·93
Rice	„	11·85	11·83	11·86	11·86	12·28
Jam, plum	1½ lb. tin	36·51	35·01	34·06	33·51	32·83
Golden Syrup	2 lb.	21·11	21·05	21·29	21·78	21·72
Oats, rolled	2 lb. pkt.	33·04	32·86	33·04	33·73	33·79
Peaches, canned	29 oz.	46·75	41·43	38·40	38·65	38·76
Pears, canned	„	43·23	39·85	38·58	39·10	38·38
Potatoes	7 lb.	35·69	40·38	40·20	40·31	40·25
Onions, brown	lb.	7·62	12·05	10·18	11·41	8·69
Soap	„	19·71	19·70	19·43	19·18	19·22

(*a*) Cash price delivered.

AVERAGE RETAIL PRICES OF DAIRY PRODUCE AND MEAT—METROPOLITAN AREA

Commodity	Unit	1958	1959	1960	1961	1962
		pence	pence	pence	pence	pence
Dairy Produce						
Butter	lb.	54·17	54·77	55·85	57·10	57·10
Cheese	„	46·05	47·72	49·43	50·02	50·27
Eggs, grade 1a	doz.	65·62	64·22	67·71	69·81	70·03
Bacon rashers	lb.	70·89	73·80	80·34	78·52	76·23
Milk, condensed	14 oz. tin	22·33	22·73	23·29	23·85	23·35
„ fresh, bottled (*a*)	quart	19·00	19·00	20·17	21·00	21·00
Meat						
Beef (fresh) :						
Sirloin	lb.	42·30	45·25	49·36	50·57	50·65
Rib (without bone)	„	42·23	45·39	50·18	50·84	49·30
Steak, rump	„	59·28	62·66	71·74	74·00	73·99
„ chuck	„	36·43	39·19	45·06	46·51	46·35
Sausages	„	22·99	22·65	22·55	22·92	23·57
Beef (corned) :						
Silverside	„	40·82	42·69	45·75	49·55	48·90
Brisket, rolled	„	29·30	31·01	35·30	36·68	35·17
Mutton (fresh) :						
Leg	„	27·11	26·76	28·72	29·68	30·28
Forequarter	„	16·22	15·59	17·48	18·56	18·24
Loin (trimmed)	„	24·54	24·41	26·69	28·17	27·29
Chops, loin	„	24·60	24·41	26·82	28·25	27·29
„ leg	„	24·68	24·53	27·11	28·49	28·61
Lamb (fresh) :						
Leg	„	46·43	44·47	46·28	45·37	48·23
Forequarter	„	29·88	28·23	30·08	29·22	31·44
Chops, loin	„	47·06	44·92	47·26	46·18	49·22
„ leg	„	47·06	44·92	47·26	46·18	49·28
Pork (fresh) :						
Leg	„	49·58	59·79	64·56	57·84	53·38
Loin	„	49·47	59·82	65·14	58·25	53·54
Chops	„	49·48	59·84	65·14	58·45	53·81

(*a*) Cash price delivered.

RETAIL PRICE INDEX NUMBERS

The collected information relating to prices of goods and services may be summarized in the form of index numbers. Prices of items, selected as being representative of a high proportion of the expenditure of wage-earner households, are combined at regular intervals by the use of " weights " in approximate proportion to quantities actually used. The aim is to express as a single number the degree of change in prices for the selected field taken as a whole. In practice the application of this principle over a term of years presents great difficulty by reason of the numerous changes which occur in the type, grade and relative quantities of many of the items commonly used.

Basically in the simplest method of compiling retail price indexes the price of each item is multiplied by a fixed quantity or " weight ", the product being an " expenditure ". The sum of these products for all items at any given date represents an " aggregate expenditure ". The " aggregate expenditures " for successive periods are converted into an index series by equating the aggregate for a selected or " base " period to 1,000 (or some other convenient number), and calculating all index numbers to this base according to the ratio which the several aggregates bear to that of the base period.

The " A " Series Index was first compiled in 1912 and although it was both rudimentary and of limited scope, covering only food, groceries and house rents, it was not discontinued until 1938. The " C " Series Index was first compiled in 1921, and retrospectively to 1914, to supply the need for a more adequate index. It was originally described as the " All Items " Index, to distinguish it from the " A " Series, because it included, in addition to food, groceries and house rents, many items of clothing, household drapery and utensils, fuel, lighting, fares, smoking and some other miscellaneous items.

The list of component items and the weighting pattern of the " C " Series Retail Price Index, first adopted in 1921, were slightly revised by Conference of Statisticians in 1936, but otherwise remained almost unchanged until the index was discontinued in 1960. From the outbreak of war in 1939 to late in 1948, periodic policy changes in regard to various war-time controls, including rationing, caused recurrent changes in consumption and in the pattern of expenditure. This rendered changes in the index desirable but made it impracticable either to produce a new index, or to revise the old one, on any basis that would render the index more representative than it already was of the changing pattern in those years.

When commodity rationing had virtually ceased in the latter part of 1948, action was taken by the Commonwealth Statistician to collect price data of about 100 additional items and to gather information as to current consumption and expenditure patterns. This was done to facilitate review of the component items and weighting system of the " C " Series Retail Price Index, in the light of the new pattern of wage-earner expenditure and consumption that appeared to be then emerging. However, there supervened, in the next few years, conditions which caused wide price dispersion coupled with a very rapid rise in prices and a new sequence of changes in consumption and the pattern of wage-earner expenditure. Under these conditions it was not possible to devise any new weighting pattern likely to be more continuously representative of conditions then current than was the existing " C " Series Index on the 1936 revision. A Conference of Statisticians considered the matter in June, 1953, and resolved, in part, as follows :—

" (a) That, in view of the persistence of recurrent changes in the pattern of consumer expenditure in the post-war period, it is undesirable to make a general revision of the list of items and weighting system of the " C " Series Retail Price Index at present, unless industrial tribunals expressly desire some revision for special purposes.

(b) That an Interim Retail Price Index be compiled with putative weights and components representative, as nearly as may be, of the post-war pattern of consumer usage and expenditure."

The " C " Series Index continued to be compiled on its pre-war basis without significant change in procedures. The Interim Retail Price Index, with the year 1952–53 as its base, was introduced in 1954 and continued until the March quarter of 1960. This Interim Index was a transitional index designed to measure retail price variations on the " C " Series model in terms of post-war consumption weights, as emerging in the early 1950's. It embraced a wider range of commodities and services than did the " C " Series Index, but it did not take into account successive major changes in the pattern of expenditure and modes of living that began to occur early in 1950 and through to 1960. These changes could not, in fact, be detected and measured promptly, and incorporated into an index, concurrently with their happening in those years. Nor was it envisaged as desirable to adopt fundamentally new procedures in price index construction until it was fully evident that far-reaching procedural changes were necessary to meet the situation that had developed between about 1950 and 1960.

During this period home-owning largely replaced the renting of privately-owned houses, the numbers of government-owned rented houses increased appreciably, the use of the motor car greatly increased and partly replaced use of public transport, various items of electrical household equipment and television came into widespread use, household consumption of electricity greatly increased, and technological developments such as the introduction of new synthetic materials produced a number of changes in clothing and other groups of items. Through the impact of these continuing changes in usage, combined with disparate movements in prices, the Interim Retail Price Index became outmoded. As studies progressed and new data became available, it was clear that no single list of items and no single set of fixed weights would be adequately representative as a basis for measuring retail price changes at all times throughout the post-war period. In consequence, the situation was met by compiling the Consumer Price Index constructed as a chain of linked indexes with significant changes in composition and weighting effected at short intervals during the period 1950–1960.

THE CONSUMER PRICE INDEX

The Consumer Price Index was first compiled in 1960, retrospectively to the September quarter of 1948. It replaced both the " C " Series Retail Price Index and the Interim Retail Price Index in official statistical publications. The title " Consumer Price Index " is used for purposes of convenience and does not imply that the new index differs in definition or purpose from previous retail price indexes. The Index is designed to measure quarterly variations in retail prices of goods and services representing a high proportion of the expenditures of wage-earner households. The weighting pattern relates to estimated aggregates of wage-earner household expenditures and not to estimated expenditures of an " average " or individual household of specified size, type, or mode of living. It is thus possible to give appropriate representation to owner-occupied houses as well as rented houses and to include motor cars, television sets, and other major expenditures which relate to some households and not to others.

Investigations revealed that the incidence and frequency of changes in the pattern of household expenditure since 1950 were such as to render it necessary to construct not one but a series of new indexes introducing additional items and changes in weighting patterns at short intervals between 1949 and 1960. The Consumer Price Index therefore consists of a sequence of four short-term retail price indexes linked

to form a continuous series, with reference base year 1952–53 = 100·0. It is envisaged that future links will be made in the index when significant changes in the pattern of household expenditure render it necessary to do so.

The Consumer Price Index covers a wide range of commodities and services arranged in the five major groups, Food ; Clothing and Drapery ; Housing ; Household Supplies and Equipment ; and Miscellaneous. It is designed only to measure the proportionate change in prices as combined in the individual groups, or the aggregate of the groups in the index. This is a basic principle of all price indexes, and failure to appreciate it gives rise to misconceptions concerning price indexes and their uses. Consumer (retail) price indexes are sometimes loosely called " cost of living indexes " and are thought to measure changes in the " cost of living." Neither the Consumer Price Index, nor any other retail price index, measures those changes in the cost of living that result directly from changes in the mode or level of living. Changes of that kind are matters for consideration apart from price indexes. But the change in prices of goods and services is a very important part of the change in any cost of living and this part is measured by consumer (retail) price indexes.

The following summary gives a general description of the nature of the items included in the several groups which together comprise the Consumer Price Index.

Food—Meat (fresh and processed) ; dairy produce ; cereal products ; soft drink, ice cream and confectionery ; potatoes, onions and preserved fruit and vegetables ; and other foods including sugar, jam, margarine, tea, coffee, baby foods, and sundry canned and other foods.

Clothing and Drapery—Men's, women's, boys' and girls' clothing ; men's, women's and children's footwear ; household drapery ; and piecegoods and knitting wool.

Housing—Costs (house price, rates, repairs and maintenance) involved in home ownership or purchase by instalments ; and rent paid to a private owner or government authority.

Household Supplies and Equipment—Household appliances ; fuel and light ; and household articles including floor coverings, kitchen and other utensils, gardening and small tools, household sundries, personal requisites, proprietary medicines and school requisites.

Miscellaneous—Transport (train, tram and bus fares and private motoring costs) ; beer ; tobacco and cigarettes ; services such as hairdressing, dry cleaning, shoe repairs and postal and telephone services ; and other expenditure including costs of radio and television operation, cinema admission and newspapers.

These groups do not include every item of household spending. It is both impracticable and unnecessary for them to do so. Prices are collected regularly for specified quantities and qualities of a large and representative selection of commodities and services. Movements in the prices of these items, when combined in suitable proportions, provide a representative measure of price change as affecting a high proportion of the expenditure of wage-earner households.

The sets of weights used have been derived from analyses of statistics of production and consumption, the Population Censuses of 1947 and 1954, the Censuses of Retail Establishments of 1948–49, 1952–53 and 1956–57 and the continuing Survey of Retail Establishments ; from information supplied by manufacturing, commercial, and other relevant sources ; and from special surveys.

The index has been compiled for each quarter from the September quarter of 1948, and for each financial year from 1948–49. (A selection of Consumer Price Index numbers *ab initio* appears in the tables on pages 380–82 of the *Official Year Book of Western Australia, No.* 3—1962, and in the *Statistical Summary from* 1829 following this Chapter.) " All Groups " index numbers, and group index numbers for each of the five major groups, are compiled and published regularly for the six State capital cities separately and combined. The reference base for *each* of these indexes is : Year 1952–53 = 100·0. Figures appearing after the decimal point possess little significance for general statistical purposes. They are inserted merely to avoid the minor distortions that would occur in rounding off the figures to the nearest whole number.

The separate city indexes measure price *movements* within each city individually. They enable comparisons to be drawn between cities as to differences in the degree of *price movement*, but not as to differences in the *actual price level* since the index for each city is independently based, on the prices recorded *in that city* during 1952–53. Similarly, the separate group indexes measure price movements of each group individually. They enable comparisons to be drawn as to differences in the degree of price change in the different groups, but do not show the comparative cost of the different groups.

The index for the six capital cities combined is a weighted average of price movement in the individual cities. The relative influence of the several cities on the combined index is determined by their populations at the 1954 Census.

CONSUMER PRICE INDEX—PERTH

(Base of *Each* Index Series : Year 1952–53 = 100)

Period	Group Index Numbers					Combined Index (All Groups)
	Food	Clothing and Drapery	Housing	Household Supplies and Equipment	Miscellaneous	
Year—						
1950–51	70·0	78·6	74·5	78·1	75·1	74·4
1951–52	87·2	95·3	87·2	92·7	90·7	90·4
1952–53	**100·0**	**100·0**	**100·0**	**100·0**	**100·0**	**100·0**
1953–54	106·2	100·0	107·8	102·0	99·5	103·0
1954–55	109·3	100·1	119·2	102·0	99·5	105·2
1955–56	111·1	101·4	123·8	102·0	105·5	107·9
1956–57	116·0	103·1	123·6	104·5	117·0	112·9
1957–58	114·4	105·7	126·0	105·7	118·3	113·6
1958–59	115·2	107·2	130·3	105·9	118·7	114·7
1959–60	118·4	108·2	133·5	107·1	120·9	116·9
1960–61	124·4	110·8	141·7	107·3	125·2	121·2
1961–62	123·5	111·7	146·4	107·3	125·3	121·6
Quarter—						
1950—						
September	65·3	73·5	69·9	73·5	70·8	69·7
December	67·7	76·5	71·4	74·6	70·8	71·6
1951—						
March	71·2	78·5	77·4	80·4	78·5	76·0
June	75·8	85·9	79·2	83·7	80·2	80·3
September	80·6	91·1	81·5	86·4	81·1	84·0
December	85·0	94·9	84·1	91·7	88·9	88·8
1952—						
March	89·8	95·8	90·3	94·4	95·4	92·9
June	93·4	99·2	92·8	98·1	97·3	96·0
September	98·4	99·4	96·1	99·2	98·8	98·6
December	98·2	100·3	99·3	99·0	99·6	99·2
1953—						
March	100·2	100·0	101·5	100·6	100·8	100·5
June	103·1	100·3	103·1	101·1	100·8	101·7
September	104·9	100·4	104·0	102·2	100·6	102·5
December	103·9	100·2	106·2	101·8	99·7	102·1
1954—						
March	106·7	100·2	106·8	101·9	98·9	102·9
June	109·3	99·2	114·0	102·1	98·8	104·3
September	109·4	99·3	116·6	102·4	98·9	104·7
December	107·8	99·8	118·6	102·2	98·8	104·4
1955—						
March	108·8	100·0	119·9	102·3	99·1	105·0
June	111·1	101·3	121·8	101·2	101·2	106·6
September	109·5	101·3	122·5	101·4	102·4	106·4
December	109·5	101·5	123·8	101·6	103·1	106·8
1956—						
March	111·6	101·5	124·5	102·1	104·1	107·9
June	113·6	101·4	124·5	102·9	112·4	110·5
September	115·6	101·9	124·1	103·5	113·9	111·7
December	114·6	102·4	123·5	104·4	117·3	112·3
1957—						
March	115·9	103·4	123·4	104·8	118·2	113·2
June	117·8	104·6	123·2	105·3	118·4	114·2
September	116·5	105·0	123·9	105·9	118·4	114·0
December	113·0	105·3	125·3	106·2	118·4	113·0
1958—						
March	113·4	105·4	126·8	105·2	118·2	113·2
June	114·8	106·9	127·9	105·3	118·2	114·1
September	115·1	107·0	128·8	105·4	118·4	114·4
December	113·8	107·5	130·4	105·7	118·7	114·3
1959—						
March	114·8	107·2	130·5	106·1	118·9	114·7
June	117·1	106·9	131·4	106·4	118·9	115·5
September	117·8	107·3	131·5	106·8	118·8	115·9
December	115·7	107·7	132·6	107·0	120·4	115·7
1960—						
March	118·4	108·0	134·2	107·4	121·2	117·1
June	121·6	109·6	135·6	107·0	123·3	119·0
September	122·9	109·8	137·0	107·4	123·7	119·8
December	122·9	110·8	141·6	107·3	125·6	120·8
1961—						
March	125·3	110·9	143·5	107·4	125·8	121·9
June	126·4	111·6	144·8	107·0	125·6	122·4
September	123·8	111·6	145·1	107·5	125·7	121·7
December	122·5	111·9	145·5	107·4	125·5	121·3
1962—						
March	123·4	111·8	147·1	107·1	124·9	121·5
June	124·2	111·5	147·8	107·2	124·9	121·8
September	124·7	111·7	148·8	107·2	124·8	122·1
December	122·8	111·8	150·9	106·9	124·9	121·7

CONSUMER PRICE INDEX—SIX CAPITAL CITIES COMBINED

(Base of *Each* Index Series: Year 1952–53 = 100)

Period	Group Index Numbers					Combined Index (All Groups)
	Food	Clothing and Drapery	Housing	Household Supplies and Equipment	Miscellaneous	
Year—						
1950–51	68·6	77·8	81·0	78·1	76·3	74·6
1951–52	89·9	93·5	89·1	92·9	92·3	91·4
1952–53	100·0	100·0	100·0	100·0	100·0	100·0
1953–54	103·5	100·7	104·8	101·6	99·9	102·0
1954–55	104·3	101·0	108·4	101·4	99·9	102·6
1955–56	110·2	102·0	115·1	101·6	105·9	106·9
1956–57	115·3	103·9	122·1	105·8	118·0	113·1
1957–58	113·3	107·0	127·3	107·5	119·7	114·2
1958–59	115·4	108·2	130·6	108·7	121·2	116·0
1959–60	119·8	109·4	135·2	109·8	123·9	118·9
1960–61	127·7	111·6	144·8	111·2	127·3	123·8
1961–62	125·5	112·8	150·7	112·7	128·1	124·3
Quarter—						
1950—						
September	62·9	72·2	78·8	73·9	71·0	69·5
December	66·0	75·4	80·2	75·4	74·4	72·3
1951—						
March	69·9	77·6	81·6	79·3	79·2	75·8
June	75·5	85·9	83·5	83·7	80·7	80·7
September	81·7	89·9	85·6	86·4	82·0	84·6
December	87·6	93·0	87·8	92·0	93·6	90·5
1952—						
March	91·8	94·1	89·8	95·5	96·3	93·4
June	98·3	97·1	93·1	97·6	97·1	97·2
September	99·8	98·4	96·3	99·3	99·1	98·9
December	98·5	99·8	99·2	99·4	100·1	99·4
1953—						
March	100·1	100·3	101·3	100·4	100·4	100·4
June	101·7	101·5	103·1	100·9	100·4	101·4
September	103·7	100·9	103·5	101·9	100·3	102·1
December	103·2	100·6	104·6	101·3	99·3	101·7
1954—						
March	103·7	100·8	104·9	101·6	100·1	102·1
June	103·5	100·4	106·2	101·7	100·0	102·1
September	102·9	100·4	106·8	101·8	99·7	101·8
December	103·3	100·9	108·0	101·7	99·5	102·2
1955—						
March	105·0	100·9	108·7	101·3	100·0	102·9
June	106·1	101·9	110·1	100·6	100·4	103·6
September	107·9	101·9	111·3	100·7	101·3	104·5
December	108·6	102·1	113·7	100·8	104·8	105·9
1956—						
March	110·3	102·0	116·8	101·6	105·1	106·9
June	114·0	102·0	118·5	103·2	112·4	110·2
September	119·0	102·3	119·7	103·6	116·0	112·9
December	115·6	103·3	121·7	105·5	118·0	113·0
1957—						
March	112·9	104·2	122·3	107·0	118·6	112·6
June	113·8	105·6	124·5	107·1	119·3	113·7
September	113·4	106·2	125·6	107·6	119·6	113·9
December	112·1	106·7	127·0	108·0	119·6	113·7
1958—						
March	113·9	106·7	127·6	107·1	119·6	114·3
June	113·9	108·2	128·8	107·3	119·8	114·8
September	113·7	108·2	129·2	107·9	120·1	114·9
December	114·6	108·4	130·4	108·7	121·3	115·8
1959—						
March	116·3	108·1	130·9	108·9	121·5	116·3
June	117·1	107·9	131·9	109·1	121·9	116·8
September	117·9	108·3	132·5	109·4	122·3	117·3
December	118·4	109·2	133·9	109·6	123·0	118·0
1960—						
March	120·3	109·5	134·8	110·0	123·8	119·0
June	122·6	110·5	139·4	110·2	126·4	121·1
September	126·0	110·7	141·4	110·6	126·7	122·5
December	126·7	111·5	144·1	111·0	127·2	123·3
1961—						
March	128·6	111·7	145·7	111·3	127·5	124·2
June	129·4	112·4	148·0	111·9	127·7	125·0
September	128·1	112·4	148·5	112·6	127·9	124·8
December	125·3	112·9	150·5	112·7	128·3	124·3
1962—						
March	124·7	112·9	151·0	112·7	128·0	124·1
June	123·7	112·9	152·6	112·8	128·2	124·0
September	124·2	113·0	153·3	112·8	128·4	124·3
December	124·3	113·2	154·7	112·4	128·7	124·4

CONSUMER PRICE INDEX: ALL GROUPS INDEX NUMBERS SIX CAPITAL CITIES, SEPARATELY AND COMBINED

(Base of *Each* Index Series: Year 1952–53 = 100)

NOTE: The separate city indexes measure price movements within each city individually. They enable comparisons to be drawn between cities as to differences in degree of price movement, but not as to differences in price level.

Period	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Weighted Average of Six Capital Cities
Year—							
1950–51	74·5	74·6	75·1	74·7	74·4	73·3	74·6
1951–52	91·9	91·0	91·8	91·4	90·4	90·4	91·4
1952–53	100·0	100·0	100·0	100·0	100·0	100·0	100·0
1953–54	101·6	102·0	102·0	102·3	103·0	105·0	102·0
1954–55	102·3	102·0	102·9	103·5	105·2	104·9	102·6
1955–56	105·7	108·1	106·3	106·9	107·9	110·2	106·9
1956–57	112·9	114·0	112·0	111·1	112·9	116·9	113·1
1957–58	114·5	114·4	114·4	111·9	113·6	117·0	114·2
1958–59	115·3	116·6	118·2	114·5	114·7	118·7	116·0
1959–60	117·8	120·0	121·2	118·0	116·9	120·8	118·9
1960–61	122·1	125·9	125·4	122·9	121·2	127·5	123·8
1961–62	122·6	126·3	127·3	122·5	121·6	128·1	124·3
Quarter—							
1950—							
September	69·2	69·6	70·4	69·8	69·7	68·6	69·5
December	72·5	72·1	72·9	72·4	71·6	70·5	72·3
1951—							
March	75·4	76·1	76·6	75·5	76·0	74·5	75·8
June	80·7	80·7	80·5	81·2	80·3	79·6	80·7
September	84·8	84·3	84·5	85·0	84·0	84·1	84·6
December	90·7	90·7	91·2	89·8	88·8	89·3	90·5
1952—							
March	94·0	92·6	94·8	93·2	92·9	92·5	93·4
June	98·0	96·4	96·8	97·5	96·0	95·5	97·2
September	98·8	98·8	99·4	99·4	98·6	98·1	98·9
December	99·5	99·3	99·6	99·0	99·2	98·8	99·4
1953—							
March	100·4	100·3	100·1	100·2	100·5	100·8	100·4
June	101·2	101·6	100·9	101·4	101·7	102·3	101·4
September	101·8	102·2	101·4	102·3	102·5	105·2	102·1
December	101·1	101·7	102·1	102·0	102·1	105·5	101·7
1954—							
March	101·8	102·0	102·5	102·4	102·9	105·0	102·1
June	101·5	102·0	102·1	102·4	104·3	104·4	102·1
September	101·4	101·3	101·8	102·8	104·7	104·2	101·8
December	102·0	101·5	102·4	102·8	104·4	104·1	102·2
1955—							
March	102·6	102·2	103·3	103·6	105·0	105·2	102·9
June	103·0	103·1	103·9	104·7	106·6	105·9	103·6
September	103·7	104·7	104·4	105·2	106·4	107·4	104·5
December	104·7	107·3	104·9	106·0	106·8	109·1	105·9
1956—							
March	105·5	108·4	106·4	106·5	107·9	110·5	106·9
June	108·8	112·0	109·5	109·9	110·5	113·6	110·2
September	112·7	114·1	111·9	111·6	111·7	116·2	112·9
December	112·6	114·2	111·7	111·4	112·3	117·2	113·0
1957—							
March	112·6	113·3	111·7	110·2	113·2	116·7	112·6
June	113·7	114·2	112·6	111·3	114·2	117·5	113·7
September	114·0	114·4	112·8	111·9	114·0	116·7	113·9
December	113·9	114·2	113·7	111·6	113·0	116·9	113·7
1958—							
March	115·0	114·2	115·0	111·5	113·2	117·1	114·3
June	115·1	114·6	115·9	112·7	114·1	117·3	114·8
September	114·8	114·9	116·7	113·5	114·4	117·7	114·9
December	115·2	116·4	117·9	114·2	114·3	118·7	115·8
1959—							
March	115·5	117·1	119·0	115·0	114·7	119·1	116·3
June	115·8	117·9	119·1	115·3	115·5	119·3	116·8
September	116·3	118·2	120·2	116·3	115·9	119·7	117·3
December	117·2	118·8	120·8	116·9	115·7	120·1	118·0
1960—							
March	118·2	119·8	121·6	118·3	117·1	120·8	119·0
June	119·6	123·0	122·3	120·6	119·0	122·6	121·1
September	120·8	124·9	123·6	121·5	119·8	125·8	122·5
December	121·6	125·5	125·1	122·4	120·8	127·1	123·3
1961—							
March	122·5	126·1	126·7	123·4	121·9	128·3	124·2
June	123·4	127·1	126·1	124·3	122·4	128·9	125·0
September	123·1	126·8	127·0	123·5	121·7	129·1	124·8
December	122·5	126·5	127·1	122·5	121·3	128·3	124·3
1962—							
March	122·4	125·9	127·7	122·1	121·5	127·5	124·1
June	122·3	125·9	127·3	121·9	121·8	127·5	124·0
September	122·7	126·2	127·5	121·9	122·1	127·6	124·3
December	123·2	126·2	127·6	121·9	121·7	128·2	124·4

RETAIL PRICE INDEX NUMBERS, 1901 TO 1962

The index numbers shown in the following table are presented as a continuous series, but they give only a broad indication of long-term trends in retail price levels. They are derived by linking a number of indexes that differ greatly in scope. The successive indexes used are : from 1901 to 1914, the " A " Series Retail Price Index ; from 1914 to 1946–47, the " C " Series Retail Price Index ; from 1946–47 to 1948–49, a composite of Consumer Price Index Housing Group (partly estimated) and " C " Series Index excluding Rent ; from 1948–49 to 1962, the Consumer Price Index.

RETAIL PRICE INDEX NUMBERS, 1901 TO 1962
SIX CAPITAL CITIES COMBINED
(Base : Year 1911 = 100)

Year	Index Number	Year	Index Number
1901	88	1932	138
1902	93	1933	133
1903	91	1934	136
1904	86	1935	138
1905	90	1936	141
1906	90	1937	145
1907	90	1938	149
1908	95	1939	153
1909	95	1940	159
1910	97	1941	167
1911	**100**	1942	181
1912	110	1943	188
1913	110	1944	187
1914 (*a*)	114	1945	187
1915 (*a*)	130	1946	190
1916 (*a*)	132	1947	198
1917 (*a*)	141	1948	218
1918 (*a*)	150	1949	240
1919 (*a*)	170	1950	262
1920 (*a*)	193	1951	313
1921 (*a*)	168	1952	367
1922 (*a*)	162	1953	383
1923	166	1954	386
1924	164	1955	394
1925	165	1956	419
1926	168	1957	429
1927	166	1958	435
1928	167	1959	443
1929	171	1960	459
1930	162	1961	471
1931	145	1962	469

(*a*) November.

STATISTICAL SUMMARY FROM 1829

POPULATION AND MIGRATION

(Excluding full-blood aboriginals)

Year	Population at 31st December (a)				Mean Population (a)		Migration (b)	
	Whole State			Metropolitan	Year ended—			
	Males	Females	Persons	Persons	30th June	31st December	Arrivals	Departures
1829	769	234	1,003			(c)	652	
1830	877	295	1,172			(c)	1,125	
1840	1,434	877	2,311			(c)	(d) 123	(e)
1850	3,576	2,310	5,886			(c)	(d) 203	(e)
1860	9,529	5,698	15,227	(c)	(c)	15,092	461	450
1870	15,474	9,610	25,084			24,894	268	303
1880	16,559	12,460	29,019			29,350	577	777
1890	28,854	19,648	48,502			47,081	3,567	1,996
1900	110,088	69,879	179,967			175,113	24,921	19,078
1901	117,885	75,716	193,601	70,700	180,856	188,135	32,762	20,780
1902	128,370	83,603	211,973	77,860	195,791	204,705	37,860	21,001
1903	134,140	90,608	224,748	83,020	212,968	219,643	30,943	20,216
1904	141,694	97,714	239,408	88,940	226,471	233,963	31,517	19,563
1905	146,498	103,640	250,138	93,450	240,896	246,681	28,791	22,934
1906	148,061	107,112	255,173	95,870	251,112	254,362	25,396	25,077
1907	146,264	108,276	254,540	96,170	255,840	255,510	22,326	27,740
1908	148,447	111,224	259,671	98,650	255,933	257,822	24,594	24,339
1909	151,325	114,350	265,675	101,490	260,355	263,279	24,643	23,537
1910	157,971	118,861	276,832	106,330	266,686	271,019	31,403	25,091
1911	167,993	125,930	293,923	111,400	278,043	286,712	41,359	29,436
1912	173,897	131,724	305,621	116,000	294,364	301,040	38,326	31,982
1913	180,534	139,401	319,935	121,700	307,145	313,383	37,637	29,607
1914	178,978	143,111	322,089	122,400	319,014	322,668	27,270	31,277
1915	170,890	145,773	316,663	122,000	322,996	321,247	20,734	32,187
1916	159,237	147,643	306,880	124,110	317,867	313,066	19,322	34,583
1917	157,532	149,306	306,838	130,000	308,756	306,339	17,822	22,977
1918	159,865	150,318	310,183	133,000	306,804	308,198	24,262	25,190
1919	174,981	152,879	327,860	142,000	311,835	319,955	32,561	18,231
1920	176,895	154,428	331,323	152,000	327,152	330,023	29,930	31,228
1921	178,968	157,580	336,548	155,590	331,973	334,084	29,333	28,435
1922	184,471	161,073	345,544	161,770	337,269	341,375	31,141	27,109
1923	191,131	165,728	356,859	173,770	345,891	350,772	33,835	27,444
1924	197,676	170,648	368,324	180,790	356,751	363,152	35,195	28,768
1925	202,554	174,973	377,527	183,500	368,525	372,970	32,920	28,587
1926	206,797	178,436	385,233	188,260	376,933	380,930	30,732	27,977
1927	215,851	184,046	399,897	195,080	385,780	392,071	35,275	25,700
1928	225,072	189,549	414,621	200,520	399,777	407,576	36,039	26,379
1929	231,361	195,276	426,637	206,310	414,489	420,756	32,847	25,952
1930	232,868	198,742	431,610	211,640	425,785	429,079	22,457	22,910
1931	232,397	201,289	433,686	215,800	431,022	432,347	14,192	16,984
1932	233,049	203,271	436,320	214,880	433,596	435,041	15,446	17,062
1933	234,744	205,898	440,642	209,000	436,798	438,780	17,261	17,401
1934	236,140	207,589	443,729	211,000	440,736	442,354	17,609	18,988
1935	238,739	210,884	449,623	214,000	444,275	446,874	19,733	18,599
1936	240,827	213,373	454,200	217,000	449,728	452,294	20,590	21,027
1937	244,050	216,492	460,542	220,000	454,532	457,328	22,571	21,561
1938	246,943	219,741	466,684	223,000	460,642	463,808	23,227	22,784
1939	249,065	223,315	472,380	227,000	466,896	469,780	21,195	20,980
1940	248,734	225,342	474,076	230,000	472,060	473,397	(c)	(c)
1941	246,842	226,371	473,213	234,000	474,180	473,988	(c)	(c)
1942	246,816	229,839	476,655	239,000	474,833	476,619	(c)	(c)
1943	246,389	231,875	478,264	245,000	476,989	476,745	(c)	(c)
1944	249,301	235,474	484,775	253,000	478,271	481,498	(c)	(c)
1945	251,590	238,498	490,088	260,000	484,720	487,510	20,831	21,482
1946	255,310	241,663	496,973	268,000	489,982	492,771	35,547	35,746
1947	261,653	247,109	508,762	276,000	497,006	502,951	54,001	50,640
1948	268,304	253,695	521,999	283,000	508,747	514,621	63,183	57,980
1949	280,273	263,911	544,184	296,000	521,932	532,603	72,127	58,363
1950	294,758	277,891	572,649	313,000	545,134	557,878	83,272	63,586
1951	304,454	285,885	590,339	322,000	570,346	580,317	79,254	70,829
1952	316,700	296,235	612,935	335,000	589,887	600,615	82,663	69,986
1953	326,372	305,371	631,743	345,000	611,191	621,034	82,063	73,805
1954	334,342	314,365	648,707	355,000	630,705	639,963	82,970	75,742
1955	343,838	324,771	668,609	368,000	648,222	657,323	89,201	79,110
1956	350,333	330,935	681,268	377,000	666,898	674,459	86,808	84,067
1957	356,195	339,039	695,234	388,000	680,949	687,448	84,397	80,645
1958	361,441	345,755	707,196	397,000	693,568	699,915	87,522	85,330
1959	366,253	352,438	718,691	406,000	705,869	711,737	95,046	93,754
1960	372,665	358,368	731,033	416,000	717,316	722,900	99,715	97,188
1961	379,947	366,258	746,205	425,000	729,770	737,386	102,229	97,706
1962	389,304	376,411	765,715	439,000	745,805	755,259	121,883	113,627
1963	398,091	386,016	784,107	452,000	764,426	773,235	128,286	121,208

(a) Estimated. Figures for 1961 and later are subject to revision after the next Census. (b) Figures shown for 1933 and later years represent recorded migration and have not been adjusted to conform to Census results. (c) Not available. (d) Figures represent excess of arrivals over departures. (e) See note (d).

VITAL STATISTICS

(Excluding full-blood aboriginals)

Year	Numbers			Rates per 1,000 of Mean Population(a)			Infant Mortality	
	Marriages	Births	Deaths (b)	Marriages	Births	Deaths (b)	Number	Rate (c)
1840	25	54	20	(d)	(d)	(d)	(d)	(d)
1850	37	186	54	(d)	(d)	(d)	(d)	(d)
1860	151	588	209	10·01	38·96	13·85	(d)	(d)
1870	153	615	281	6·15	34·27	15·18	100	117·23
1880	214	933	382	7·29	31·79	13·02	72	77·17
1890	278	1,561	540	5·90	33·16	11·47	140	89·69
1900	1,781	5,454	2,240	10·17	31·15	12·79	688	126·15
1901	1,821	5,718	2,519	9·68	30·39	13·39	737	128·89
1902	2,024	6,232	2,823	9·89	30·44	13·79	885	142·01
1903	2,064	6,699	2,788	9·40	30·50	12·69	946	141·22
1904	2,088	7,176	2,817	8·92	30·67	12·04	811	113·02
1905	2,123	7,582	2,709	8·61	30·74	10·98	790	104·19
1906	2,261	7,800	3,084	8·89	30·66	12·12	858	110·00
1907	2,114	7,712	2,931	8·27	30·18	11·47	752	97·51
1908	2,012	7,755	2,879	7·80	30·08	11·17	657	84·72
1909	1,997	7,602	2,704	7·59	28·87	10·27	593	78·01
1910	2,107	7,585	2,740	7·77	27·99	10·11	593	78·18
1911	2,421	8,091	2,923	8·44	28·22	10·19	615	76·01
1912	2,524	8,689	3,335	8·38	28·86	11·08	713	82·06
1913	2,572	9,218	2,934	8·21	29·41	9·36	648	70·30
1914	2,660	9,204	3,043	8·24	28·52	9·43	627	68·12
1915	2,580	9,017	2,992	8·03	28·07	9·31	600	66·54
1916	2,365	8,563	3,085	7·55	27·35	9·85	567	66·22
1917	1,621	7,882	2,769	5·29	25·73	9·04	450	57·09
1918	1,612	7,106	2,833	5·23	23·06	9·19	406	57·13
1919	2,194	6,937	3,590	6·86	21·68	11·22	424	61·12
1920	2,931	8,149	3,388	8·88	24·69	10·27	538	66·02
1921	2,656	7,807	3,480	7·95	23·37	10·42	611	78·26
1922	2,446	8,131	3,167	7·17	23·82	9·28	452	55·59
1923	2,376	7,854	2,930	6·77	22·39	8·35	442	56·02
1924	2,596	8,301	3,263	7·15	22·86	8·99	414	49·87
1925	2,746	8,185	3,315	7·36	21·95	8·89	463	56·57
1926	2,844	8,301	3,350	7·47	21·79	8·79	409	49·27
1927	3,107	8,482	3,393	7·93	21·63	8·65	389	45·86
1928	3,309	8,704	3,640	8·12	21·36	8·93	419	48·14
1929	3,367	9,051	3,930	8·00	21·51	9·34	508	56·13
1930	3,205	9,200	3,774	7·47	21·44	8·80	430	46·74
1931	2,741	8,549	3,681	6·34	19·77	8·51	355	41·53
1932	2,904	7,965	3,715	6·68	18·31	8·54	355	44·57
1933	3,374	7,874	3,790	7·69	17·95	8·64	290	36·83
1934	3,682	7,801	4,076	8·32	17·64	9·21	319	40·89
1935	3,940	8,119	4,118	8·82	18·17	9·22	326	40·15
1936	4,242	8,479	4,230	9·38	18·75	9·35	358	42·22
1937	4,169	8,609	4,065	9·12	18·82	8·89	323	37·52
1938	4,153	9,141	4,234	8·95	19·71	9·13	309	33·80
1939	4,195	9,036	4,336	8·93	19·23	9·23	369	40·84
1940	5,234	9,121	4,486	11·06	19·27	9·48	403	44·18
1941	5,074	10,118	4,769	10·71	21·35	10·06	357	35·28
1942	5,441	9,901	5,076	11·42	20·77	10·65	365	36·86
1943	4,528	10,481	4,587	9·50	21·98	9·62	342	32·63
1944	4,506	10,870	4,478	9·36	22·58	9·30	354	32·57
1945	3,788	10,672	4,712	7·77	21·89	9·67	315	29·52
1946	5,171	12,105	4,753	10·49	24·57	9·65	376	31·06
1947	5,282	12,874	4,723	10·50	25·60	9·39	398	30·92
1948	5,186	12,931	4,685	10·08	25·13	9·10	331	25·60
1949	4,951	13,511	4,790	9·30	25·37	8·99	357	26·42
1950	5,434	14,228	5.058	9·74	25·50	9·07	386	27·13
1951	5,390	14,794	5,288	9·29	25·49	9·11	425	28·73
1952	5,389	15,413	5,209	8·97	25·66	8·67	384	24·91
1953	5,032	15,862	5,072	8·10	25·54	8·17	378	23·83
1954	5,204	15,928	5,364	8·13	24·89	8·38	359	22·54
1955	5,145	16,623	5,379	7·83	25·29	8·18	373	22·44
1956	5,080	16,916	5,572	7·53	25·08	8·26	384	22·70
1957	4,897	16,924	5,297	7·12	24·62	7·71	357	21·09
1958	5,038	16,731	5,554	7·20	23·90	7·94	360	21·52
1959	5,387	17,111	5,497	7·57	24·04	7·72	345	20·16
1960	5,323	16,926	5,697	7·36	23·41	7·88	366	21·62
1961	5,150	17,078	5,729	6·98	23·16	7·77	336	19·67
1962	5,466	17,064	5,810	7·24	22·59	7·69	380	22·27
1963	5,755	17,290	5,976	7·44	22·36	7·73	353	20·42

(a) Rates for 1961 and later years are subject to revision after the next Census. (b) Excludes deaths of defence personnel from September, 1939 to June, 1947. (c) Deaths under one year of age per 1,000 live births.
(d) Not available.

PUBLIC REVENUE AND EXPENDITURE

Year (a)	Consolidated Revenue Fund								
	Revenue from—			Total Revenue	Expenditure on—				Total Expenditure
	Land (including Land Tax)	Mining	Timber		Lands and Surveys	Agriculture Generally	Mining	Woods and Forests (b)	
	£	£	£	£	£	£	£	£	£
1840	2,639			16,827	769				15,098
1850	1,994		82	19,138	2,105				16,657
1860	16,712		631	69,863	2,194				61,745
1870	19,428	26	649	98,132	5,803				113,046
1880	34,693	207	852	180,049	7,670				204,337
1890	103,244	4,029	1,140	414,314	15,702		3,522		401,737
1900	118,462	106,589	11,064	2,875,396	45,307	6,304	63,069	2,571	2,615,675
1901	138,654	94,632	18,006	3,080,580	56,316	11,093	66,437	2,724	3,164,147
1902	128,746	113,644	16,992	3,690,585	58,986	12,104	62,231	3,363	3,491,016
1903	130,123	47,532	21,444	3,996,470	69,441	45,442	64,432	4,153	3,886,802
1904	147,723	44,026	20,152	3,978,468	114,084	49,087	156,647	3,938	4,127,973
1905	160,042	36,112	18,588	4,019,066	131,259	39,596	168,699	4,864	4,145,625
1906	170,384	34,674	21,122	3,973,050	112,793	49,310	75,344	5,785	4,047,461
1907	197,798	34,067	21,482	3,837,604	102,775	42,646	69,867	6,271	3,931,715
1908	222,286	31,434	23,499	3,893,863	102,147	46,077	71,572	8,802	3,898,003
1909	263,252	32,024	26,516	3,816,271	112,759	50,306	64,655	9,031	3,906,679
1910	298,990	32,227	27,705	4,274,424	72,297	47,481	60,598	8,531	4,060,610
1911	366,138	38,189	34,668	3,850,440	80,382	54,028	68,161	8,861	3,734,448
1912	360,874	29,294	40,983	3,966,673	90,792	63,205	70,553	10,469	4,101,082
1913	364,693	26,420	43,439	4,596,659	83,150	87,122	68,190	11,463	4,787,063
1914	379,334	26,000	44,929	5,205,343	71,904	59,892	66,333	12,093	5,340,754
1915	366,305	23,669	43,003	5,140,725	62,093	48,863	59,940	10,458	5,706,542
1916	370,387	23,408	35,366	5,356,978	45,565	46,275	62,694	8,565	5,705,201
1917	324,654	20,546	27,379	4,577,007	46,286	57,600	64,698	10,087	5,276,764
1918	320,756	19,291	39,248	4,622,536	46,326	54,438	60,030	11,220	5,328,279
1919	334,786	17,643	26,818	4,944,850	44,703	62,455	57,302	10,873	5,596,865
1920	377,155	24,050	54,010	5,863,501	59,816	68,410	69,958	36,119	6,531,725
1921	400,153	24,108	70,796	6,789,565	90,182	65,863	73,551	50,128	7,476,291
1922	381,278	22,929	73,530	6,907,107	108,192	58,974	65,684	58,142	7,639,242
1923	391,343	19,880	72,095	7,207,492	101,056	56,398	66,447	56,846	7,612,856
1924	401,683	17,376	115,947	7,865,594	100,897	59,656	63,002	81,050	8,094,753
1925	447,975	16,328	151,787	8,381,446	82,963	63,225	61,481	85,410	8,439,844
1926	482,621	16,305	188,641	8,808,166	72,689	70,487	68,492	112,978	8,907,309
1927	497,946	16,689	183,692	9,750,833	72,191	77,963	86,160	110,173	9,722,588
1928	558,189	18,812	197,026	9,807,949	69,141	85,881	102,066	113,061	9,834,415
1929	539,526	17,724	153,533	9,947,951	71,843	93,851	102,148	95,489	10,223,919
1930	518,727	16,380	148,822	9,750,515	72,823	98,645	105,116	109,321	10,268,518
1931	404,020	17,557	85,762	8,686,756	64,306	77,547	105,141	37,582	10,107,295
1932	355,865	16,906	52,220	8,035,316	52,045	64,918	102,252	32,794	9,593,212
1933	328,375	20,304	61,435	8,332,153	48,001	65,061	87,424	31,651	9,196,234
1934	320,829	27,768	83,194	8,481,697	46,616	66,640	109,985	42,165	9,270,609
1935	372,583	45,049	110,504	9,331,430	47,823	75,535	120,665	53,794	9,498,525
1936	324,513	42,242	134,318	10,033,721	51,094	87,254	145,720	65,323	9,945,343
1937	306,360	41,838	155,469	10,185,433	51,743	100,419	144,092	73,227	10,556,638
1938	294,683	38,884	165,126	10,819,042	52,237	118,174	142,504	83,080	10,829,735
1939	253,405	41,201	137,395	10,949,660	56,765	117,049	144,103	76,708	11,170,102
1940	232,637	39,863	143,585	11,119,943	56,077	112,640	139,698	79,230	11,266,768
1941	255,253	34,559	151,079	11,432,068	56,585	108,885	129,847	83,160	11,420,957
1942	263,612	32,579	105,083	11,940,149	54,202	107,559	123,341	80,797	11,938,381
1943	289,832	21,708	137,596	13,151,678	55,353	105,370	112,264	117,659	13,127,242
1944	321,774	21,873	128,733	13,589,176	61,392	112,529	113,507	163,841	13,551,154
1945	308,747	20,089	137,840	13,953,830	65,122	132,920	128,016	199,440	13,949,340
1946	304,758	26,306	134,749	14,407,557	85,028	168,518	133,482	199,900	14,407,557
1947	364,646	37,750	236,442	14,980,875	119,910	182,292	162,539	216,649	15,028,427
1948	433,148	36,606	242,363	17,710,310	159,884	211,863	185,657	208,294	18,062,392
1949	460,347	42,318	182,654	20,560,646	186,163	257,363	193,802	182,616	21,377,907
1950	481,359	43,512	248,684	25,810,961	283,834	345,789	208,362	241,083	25,787,203
1951	465,169	43,242	287,141	28,156,181	295,370	400,394	246,789	280,389	27,996,834
1952	466,936	45,258	346,962	33,955,157	407,321	492,858	281,905	385,287	34,546,768
1953	520,709	51,444	453,287	38,884,236	437,517	551,697	349,160	525,819	39,392,119
1954	648,586	62,498	550,180	43,145,840	541,390	612,574	392,321	536,749	43,248,519
1955	768,327	65,477	563,702	45,719,846	560,750	667,655	357,224	594,989	46,203,889
1956	833,008	78,808	866,424	49,612,406	618,431	750,801	379,170	1,075,688	51,443,237
1957	1,280,325	68,832	875,361	54,330,934	726,226	862,224	408,652	1,077,657	56,243,302
1958	1,707,178	74,392	898,361	57,053,977	764,361	881,423	412,702	1,149,031	58,177,307
1959	1,625,139	92,266	911,711	60,068,237	770,334	920,794	414,175	1,144,547	61,752,970
1960	1,707,274	108,158	923,035	64,387,912	826,819	1,031,145	461,400	1,167,302	65,793,726
1961	1,432,949	121,004	938,023	69,332,710	879,977	1,118,067	528,104	1,194,355	70,537,286
1962	1,633,291	193,884	1,086,211	74,925,785	930,357	1,253,791	580,839	1,348,212	75,889,798
1963	1,739,054	204,282	1,083,593	78,590,769	1,091,502	1,365,846	636,832	1,397,829	79,343,643

(a) From 1900, year ended 30th June. (b) Includes expenditure under Special Acts.

NET EXPENDITURE FROM LOAN FUNDS; PUBLIC DEBT

Year (a)	Net Expenditure from Loan Funds on Public Works and Services (b)							Public Debt (as at end of year)	
	Railways, Tramways and Omnibuses	Electricity Supply	Harbours, Rivers, Light-houses, etc.	Water Supplies, Sewerage and Irrigation	Public Buildings	Other	Total	Gross Amount Outstanding	Sinking Fund
	£	£	£	£	£	£	£	£	£
1860								1,750	
1870									
1880	(c) 274,320		(d) 19,016			(e)	(d)400,856	361,000	(e)
1890	1,497		3,011	760	(f) 37,837	(e)	15,906	1,367,445	85,107
1900	151,111		197,488	474,615		55,115	878,329	11,674,640	377,161
1901	332,729		214,830	872,800		74,933	1,495,292	12,709,430	431,478
1902	578,985		182,962	731,989		51,887	1,545,823	14,942,310	486,737
1903	1,059,418		138,422	413,435		54,626	1,665,901	15,627,298	655,069
1904	443,339		84,145	130,442		52,703	710,629	16,090,288	864,752
1905	348,327		96,296	469		209,261	654,353	16,642,773	1,073,844
1906	219,937		28,455	18,681	3,248	102,121	372,442	18,058,553	1,320,603
1907	329,527		96,050	91,708	112,098	271,581	900,964	19,222,638	1,600,043
1908	305,817		73,464	127,886	106,595	119,983	733.745	20,493,618	1,904,434
1909	547,639		81,185	114,540	97,171	171,673	1,012,208	21,951,753	2,233,385
1910	454,121		86,792	99,268	75,894	312,920	1,028,995	23,287,453	2,569,707
1911	(g)908,968		(g) 33,275	(g)153,592	(g)52,909	(g)408,168	(g)1,556,912	23,703,953	2,544,812
1912	1,320,309		185,764	124,989	130,846	547,644	2,309,552	26,283,523	2,918,734
1913	1,993,901		150,499	395,115	70,132	799,571	3,409,218	30,276,436	3,309,345
1914	1,166,584		89,870	332,110	44,166	1,280,280	2,913,010	34,420,181	3,692,103
1915	693,118		165,360	248,142	81,004	1,333,984	2,521,608	37,022,622	4,068,888
1916	447,553		109,228	165,543	40,661	821,657	1,584.642	39,139,676	4,528,432
1917	337,472		121,858	76,485	23,350	296,018	855.183	40,914,826	5,035,961
1918	207,973		84,933	68,248	17,537	675,487	1,054,178	42,304,001	5,570,853
1919	187,345		69,948	46,637	21,570	724,236	1,049,736	43,637,076	6,139,008
1920	121,149		102,177	47,080	10,603	2,382,311	2,663,320	46,822,003	6,827,878
1921	198,926		118,333	213,608	24,963	2,030,574	2,586.404	49,039,667	7,641,564
1922	603,476		91,641	217,579	44,440	1,497,789	2,454.925	54,959,778	8,370,160
1923	679,375		120,140	200,856	18,680	2,370,248	3,389.299	58,485,854	8,781,051
1924	651,519		139,014	435,665	88,595	2,622,040	3,936,833	62,765,782	9,373,571
1925	621,335		181,012	650,295	91,140	2,555,239	4,099,021	64,493,261	9,985,031
1926	769,774		219,303	678,461	77,795	2,333,353	4,078,686	70,010,921	10,654,493
1927	779,421		191,187	441,845	117,483	2,450,265	3,980,201	70,606,175	8,756,936
1928	951,134		264,860	566,021	127,764	2,288,583	4,198,362	76,427,764	8,899,080
1929	912,481		263,847	545,839	91,079	2,127,506	3,940,752	(h)69,355,449	(h)991,276
1930	909,370		264,360	305,056	54,108	2,112,831	3,645,725	71,194,325	1,040,463
1931	439,015		128,599	209,964	Cr. 41	728,309	1,505.846	76,564,885	1,310,369
1932	131,448		77,490	575,903		527,401	1,312,242	79,707,953	1,308,906
1933	187,014		242,279	677,622	34,628	918,987	2,060,530	83,514,698	1,346,549
1934	329,440		246,068	803,201	98,009	1,171,783	2,648,501	85,847,802	371,412
1935	498,344		304,941	1,077,273	106,399	551,256	2,538,213	88,590,176	523,815
1936	472,779		300,955	1,243,406	84,422	350,145	2,451,707	90,344,055	569,184
1937	245,422		175,991	1,151,369	89,126	370,316	2,032,224	92,332,855	645,906
1938	474,861		100,540	921,550	91,678	571,851	2,160,480	93,711,941	307,211
1939	220,644		92,014	888,708	114,788	320,030	1,636,184	95,472,601	359,656
1940	100,205		51,758	807,293	366,017	486,806	1,812,079	96,230,399	303,976
1941	106,958	8,801	76,098	824,290	153,047	240,120	1,409,314	97,791,724	573,576
1942	55,250	12,578	55,668	302,547	35,043	218,634	679,720	97,359,245	267,426
1943	78,593	46,137	66,258	49,857	27,432	108,615	376,892	96,988,206	173,515
1944	24,340	15,357	Cr. 71,613	37,661	82,979	17,121	105,845	96,478,295	70,159
1945	69,985	5,381	30,519	74,836	120,395	245,786	546,902	95,894,885	127,093
1946	70,924	104,060	37,609	236,486	225,298	137,886	812,263	96,925,931	503,996
1947	267,740	166,054	86,436	726,741	386,101	410,555	2,043,627	99,002,301	545,284
1948	338,062	735,697	158,232	693,878	548,505	62,628	2,537.002	100,274,741	154,496
1949	456,477	1,065,343	224,499	813,227	549,572	471,176	3,580,294	103,688,743	62,822
1950	2,248,183	2,345,719	401,853	1,001,043	678,299	1,429,599	8,104,696	109,550,142	70,980
1951	1,861,324	3,295,712	582,213	2,045,312	1,001,695	1,540,338	10,326,594	123,186,766	8,346
1952	7,599,037	3,341,916	1,346,808	2,401,331	1,364,556	1,704,647	17,758,295	138,288,531	323,313
1953	6,766,730	89,576	1,210,975	2,429,186	2,716,163	4,393,707	17,606,337	153,072,170	930,677
1954	5,647,407	703,104	1,163,776	1,969,720	1,572,045	3,137,922	14,193,974	165,782,545	410,841
1955	4,875,814	705,000	960,011	2,830,321	1,996,616	3,363,208	14,730,970	177,881,349	221,058
1956	3,069,649	1,024,690	819,147	2,758,108	2,093,645	3,549,076	13,314,315	188,732,740	122,377
1957	2,759,379	2,100,000	475,057	3,559,439	2,799,502	4,584,634	16,278,011	205,145,043	55,918
1958	2,104,682	1,240,000	699,109	3,847,128	2,945,308	3,299,558	14,135,785	218,428,445	73,659
1959	2,855,615	1,100,000	713,790	4,197,363	3,704,970	3,599,387	16,171,125	232,118,579	86,437
1960	2,476,645	776,506	686,717	4,773,572	4,361,260	3,177,322	16,252,022	246,787,292	85,529
1961	2,110,724	200,000	983,061	5,156,966	5,239,437	4,018,618	17,708,806	261,535,019	46,901
1962	2,716,068	150,000	1,293,528	5,475,955	6,015,762	3,224,270	18,875,583	277,564,978	110,966
1963	3,101,901	250,000	1,218,890	5,384,769	6,709,979	2,781,329	19,446,868	293,668,091	242,642

(a) From 1900, year ended 30th June. Sinking Fund at 31st March from 1900 to 1928. (b) From 1928 includes expenditure from Loan Suspense Account. (c) Total amount for the years 1877 to 1881. (d) Total amount for the years 1872 to 1881. (e) Not available. (f) Includes expenditure prior to 1890. (g) Including readjustments for previous years. (h) Reduction due to operation of Financial Agreement Act of 1928.

BANKING AND INSURANCE

Year	Trading Banks			Savings Banks (c)		Insurance			
						Life		General (d) (e)	
	Depositors' Balances (a)	Loans (other than Loans to Authorized Dealers in the Short-term Money Market), Advances and Bills Discounted (a)	Bank Clearings (b)	Number of accounts open at end of Year	Depositors' Balances at end of Year	Sum Insured under Policies Existing at end of Year		Gross Premiums	Gross Claims
						Ordinary (including Superannuation)	Industrial		
	£'000	£'000	£'000		£	£'000	£'000	£	£
1870	(f)	(f)		895	13,582	(f)	(f)		
1880	(f)	(f)		1,299	22,724	(f)	(f)		
1890	952	1,404		3,014	34,616	(f)	(f)		
1900	4,391	2,757		33,646	1,299,144	3,458	220		
1901	4,437	3,061		39,318	1,618,359	3,816	238		
1902	4,796	3,224		45,108	1,889,082	4,337	261		
1903	4,792	3,651		48,008	1,988,624	4,925	264		
1904	4,734	3,855		54,873	2,079,763	5,344	266		
1905	5,098	4,111		59,764	2,207,296	5,557	353		
1906	5,551	4,614		63,573	2,316,161	5,626	365	(f)	(f)
1907	5,348	5,062		66,737	2,633,135	5,621	355		
1908	4,985	5,451		70,340	2,881,189	5,773	445		
1909	5,116	5,488		75,852	3,055,575	5,937	481		
1910	6,314	6,114		84,262	3,477,708	6,359	585		
1911	7,165	7,500		97,147	4,088,800	6,998	684		
1912	6,697	8,412		108,622	4,400,398	7,462	831		
1913	6,420	8,176	(f)	121,201	4,675,097	7,638	1,009		
1914	6,894	8,317		134,510	4,925,454	7,921	1,134		
1915	7,615	8,709		144,777	5,142,291	8,029	1,225		
1916	8,049	9,317		156,458	5,333,463	8,330	1,365		
1917	8,589	9,143		171,207	5,841,611	8,620	1,521	360,648	98,065
1918	9,687	9,585		182,140	6,290,028	9,051	1,728	391,380	151,673
1919	10,803	10,414		196,584	7,002,474	9,925	1,953	401,706	147,620
1920	12,371	10,797		211,415	7,257,840	10,820	2,045	539,944	184,067
1921	12,002	10,916		226,468	7,716,529	12,091	2,349	556,185	341,919
1922	12,260	10,766		237,505	7,759,317	12,793	2,594	597,675	328,867
1923	12,674	10,398		250,214	8,033,420	13,772	2,854	620,861	217,530
1924	13,122	11,656		264,842	8,218,147	14,655	3,180	764,152	271,565
1925	13,600	12,048		277,701	8,303,934	15,870	3,405	834,380	361,979
1926	(g) 14,444	(g) 12,872		292,353	8,969,824	16,985	3,658	916,006	450,389
1927	14,651	14,617		309,176	9,694,396	18,139	4,021	(g)415,329	(g)216,226
1928	15,513	15,296		330,284	10,645,373	19,463	4,375	1,055,624	600,194
1929	13,405	17,240		350,046	11,609,190	20,634	4,683	1,195,526	602,706
1930	12,762	20,886	1,707	367,665	11,728,617	20,828	4,502	1,226,101	581,607
1931	12,228	20,818	1,368	371,662	10,867,422	19,953	4,177	957,008	485,620
1932	14,281	19,646	1,446	206,997	10,217,739	19,591	4,293	846,498	327,445
1933	14,892	19,217	1,528	194,095	10,064,464	19,724	4,459	893,218	397,817
1934	16,426	19,371	1,622	192,915	10,398,972	20,315	4,697	872,956	400,446
1935	18,103	20,531	1,815	197,611	10,929,010	21,449	4,973	964,609	454,809
1936	19,366	21,616	1,947	208,990	11,517,220	22,704	5,344	1,087,779	507,335
1937	19,732	22,266	2,011	217,247	11,834,794	24,428	5,687	1,205,146	682,812
1938	20,615	22,571	2,092	225,118	12,037,486	25,826	5,972	1,320,314	762,869
1939	20,590	23,887	2,059	232,564	12,396,191	26,926	6,304	1,372,956	730,778
1940	21,110	23,765	2,293	233,649	11,860,151	27,354	6,543	1,441,950	729,969
1941	23,549	22,809	2,234	238,820	12,521,159	27,921	6,938	1,395,903	618,153
1942	25,959	21,819	2,398	250,153	13,821,138	27,940	7,656	1,402,777	622,303
1943	30,568	18,914	2,638	279,469	18,884,330	28,932	8,328	1,173,589	507,033
1944	35,764	16,731	2,774	301,225	25,790,714	30,690	8,981	1,184,443	448,445
1945	37,423	15,752	2,907	316,565	31,763,170	33,127	9,512	1,282,270	577,196
1946	(h) 33,326	(h) 16,863	3,637	340,737	38,289,087	38,804	10,518	1,444,946	611,433
1947	36,245	22,694	4,341	349,091	36,625,137	44,008	11,527	1,751,278	868,571
1948	41,016	24,377	5,519	358,709	36,182,591	49,446	12,569	2,093,779	1,044,528
1949	50,486	24,952	6,607	365,130	37,534,968	55,606	13,563	2,535,463	1,026,541
1950	58,229	27,650	8,829	378,670	39,612,361	63,166	14,752	2,956,479	1,220,179
1951	74,622	33,340	11,403	392,790	44,672,327	74,362	16,230	3,679,886	1,670,488
1952	85,461	41,676	11,466	403,678	47,170,835	85,504	17,628	4,678,956	2,630,471
1953	85,117	43,676	12,341	414,288	49,794,288	97,750	19,055	5,368,019	2,726,318
1954	90,932	53,214	12,692	422,480	52,614,379	110,784	20,120	5,713,329	2,637,919
1955	90,448	68,915	13,793	426,637	53,628,939	125,772	20,744	6,281,459	3,140,606
1956	87,035	71,078	14,538	446,419	57,933,790	141,069	21,057	6,772,858	3,562,896
1957	92,789	67,537	15,569	473,548	62,693,286	158,632	21,267	6,896,208	4,101,225
1958	93,239	70,599	15,163	497,690	65,948,351	176,180	21,501	7,800,541	3,903,656
1959	90,150	73,553	17,250	527,079	71,499,134	198,161	21,639	8,584,513	4,582,351
1960	96,038	71,032	22,462	550,966	78,622,269	229 870	22,162	9,975,554	5,335,269
1961	95,047	73,123	23,639	577,619	80,711,848	261,818	22,372	10,803,666	6,384,893
1962	104,638	69,602	25,906	625,070	90,527,488	298,946	23,377	11,456,803	6,127,333
1963	109,976	76,765	29,937	683,417	104,406,239	(i)	(i)	12,380,737	7,361,415

(a) Average based on amounts as at close of business each week. From 1927, year ended 30th June. (b) Average for calendar year. (c) From 1900, year ended 30th June. (d) From 1927, year ended 30th June. (e) Excludes transactions of The Motor Vehicle Insurance Trust, which became the sole insurer in respect of motor vehicle (third party) insurance from 1st July, 1949. (f) Not available. (g) Six months ended 30th June. (h) Average for nine months to 30th June. (i) Not available at time of publication.

TRANSPORT AND COMMUNICATION

Year	State Government Railways (a)				Private Railways	Posts, Telegraphs and Telephones			Shipping (h)	
	Route Miles at end of Year (b)	Operating Revenue (c)	Operating Expenses (c)	Paying Goods and Livestock Carried (c)	Route Miles at end of Year (d)	Telegraph and Telephone Lines (e)	Revenue (f)(g)	Expenditure (f)(g)	Vessels—Cleared to Ports outside the State	
									Number	Net Tonnage
		£	£	tons		miles	£'000	£'000		
1870							4	7	131	67,730
1880	34	2,626	3,851	2,465	38	1,568	13	30	168	126,444
1890	188	45,113	51,640	60,692	385	2,961	27	37	267	420,327
1900	1,355	1,259,512	861,470	1,384,040	623	6,053	206	249	747	1,606,332
1901	1,355	1,353,704	1,044,920	1,719,720	629	6,173	219	251	901	1,872,027
1902	1,360	1,521,429	1,256,370	1,888,146	629	6,112	233	259	765	1,686,905
1903	1,516	1,553,485	1,247,873	1,795,019	627	6,079	221	277	703	1,662,741
1904	1,541	1,588,084	1,179,624	2,057,270	655	6,199	236	305	655	1,777,186
1905	1,605	1,610,129	1,256,003	2,154,275	694	6,389	264	302	656	1,828,256
1906	1,612	1,634,444	1,201,753	2,096,514	743	6,451	260	295	609	1,792,176
1907	1,764	1,537,333	1,135,907	2,091,376	765	6,686	261	319	597	1,760,338
1908	1,943	1,501,925	1,007,732	2,058,741	798	6,868	272	346	592	1,816,805
1909	2,045	1,508,436	973,871	1,997,100	842	6,719	277	336	650	2,054,189
1910	2,145	1,637,334	1,096,908	2,241,859	902	7,480	306	392	726	2,372,260
1911	2,376	1,844,419	1,216,477	2,488,844	948	7,580	314	452	781	2,566,090
1912	2,598	1,884,604	1,343,977	2,542,087	981	7,758	321	494	765	2,614,127
1913	2,854	2,037,853	1,506,600	2,866,241	952	8,513	336	633	873	3,022,958
1914	2,967	2,257,011	1,572,008	3,170,144	960	8,804	344	571	(i)527	(i)1,794,670
1915	3,332	2,058,244	1,497,826	2,523,859	976	(j)	346	544	655	2,384,122
1916	3,332	2,088,110	1,511,655	2,554,858	993	8,791	367	526	689	2,492,875
1917	3,425	1,877,382	1,448,451	2,400,246	1,010	8,342	380	487	731	2,557,986
1918	3,491	1,816,388	1,451,334	2,259,070	983	8,313	389	445	315	1,102,295
1919	3,539	1,872,897	1,567,591	2,379,403	898	8,328	452	463	636	2,111,894
1920	3,539	2,291,876	2,000,473	2,613,606	918	8,270	443	534	729	2,659,302
1921	3,539	2,720,032	2,422,004	2,604,068	895	8,318	542	618	789	2,825,586
1922	3,539	2,827,856	2,328,843	2,548,258	878	8,413	592	737	874	3,231,366
1923	3,555	2,915,985	2,210,348	2,624,320	865	8,706	608	863	709	3,087,946
1924	3,629	3,227,371	2,297,980	3,023,299	812	10,098	608	1,306	673	3,101,166
1925	3,733	3,359,501	2,355,087	3,284,915	*854	11,031	635	971	805	3,657,529
1926	3,865	3,337,292	2,509,049	3,237,496	884	11,402	680	1,027	685	3,256,132
1927	3,918	3,607,989	2,685,693	3,438,587	872	11,858	740	937	799	3,796,564
1928	3,977	3,858,051	2,910,811	3,697,648	838	11,526	799	963	812	3,806,078
1929	4,079	3,799,764	3,055,446	3,670,147	842	11,691	846	915	808	3,674,298
1930	4,111	3,659,203	3,112,895	3,530,188	847	11,804	909	920	794	3,932,476
1931	4,181	3,198,913	2,610,839	3,153,525	826	11,812	836	813	742	3,686,229
1932	4,235	2,922,385	2,123,281	2,847,568	830	11,699	788	617	694	3,530,279
1933	4,338	2,932,140	2,111,588	2,840,077	845	11,723	820	633	691	3,563,679
1934	4,360	2,919,315	2,186,506	2,652,247	854	11,785	848	668	683	3,567,884
1935	4,359	3,311,839	2,382,744	2,903,481	869	11,505	922	734	730	3,775,162
1936	4,358	3,446,161	2,488,117	2,886,648	880	11,532	975	827	725	3,831,105
1937	4,357	3,462,037	2,620,093	2,798,448	873	12,090	1,039	889	761	3,753,586
1938	4,376	3,677,850	2,709,914	3,061,921	854	12,057	1,082	922	866	4,111,171
1939	4,378	3,599,143	2,911,570	2,859,141	844	12,071	1,108	1,017	930	4,326,529
1940	4,381	3,555,982	2,828,329	2,658,876	831	12,040	1,117	991	805	3,751,135
1941	4,381	3,571,828	2,757,891	2,603,857	815	12,080	1,150	995	556	3,087,389
1942	4,381	3,996,312	3,025,919	2,638,469	818	12,118	1,301	1,043	492	2,507,742
1943	4,381	4,417,907	3,447,512	2,504,682	849	12,164	1,542	1,129	312	1,467,495
1944	4,381	4,386,523	3,795,929	2,560,137	829	12,523	1,639	1,285	385	1,579,656
1945	4,381	4,276,250	3,764,290	2,904,431	798	12,435	1,682	1,301	382	1,528,336
1946	4,381	4,106,718	4,026,706	2,727,702	706	12,429	1,731	1,457	490	2,472,948
1947	4,348	4,045,935	4,423,801	2,576,936	759	12,423	1,845	1,663	572	2,646,285
1948	4,348	4,598,896	5,570,000	2,857,573	739	12,661	1,961	2,209	752	3,431,319
1949	4,321	5,214,844	6,702,254	2,736,720	734	12,874	2,066	2,896	950	4,677,867
1950	4,252	6,472,049	7,501,395	2,843,292	774	14,439	2,369	3,238	1,006	5,271,814
1951	4,228	7,196,214	8,618,863	3,033,213	752	14,120	2,756	4,151	1,060	5,552,156
1952	4,113	9,163,532	*10,665,561	3,062,641	752	14,598	3,645	4,925	1,045	5,523,959
1953	4,108	7,972,260	12,087,333	2,618,806	724	14,904	3,896	5,462	1,025	5,406,663
1954	4,111	11,374,307	13,756,109	3,205,958	758	14,946	4,181	5,873	1,005	5,319,845
1955	4,111	12,530,410	13,935,329	3,406,634	748	15,149	4,544	5,927	1,136	6,144,377
1956	4,119	13,274,166	14,993,054	3,792,856	726	15,284	4,915	6,922	1,268	6,776,135
1957	4,117	14,044,111	16,011,316	4,223,031	*706	15,482	5,396	7,404	1,244	6,531,402
1958	4,117	12,975,176	14,842,662	3,588,914	575	15,579	5,842	8,111	1,219	6,499,081
1959	4,117	13,699,803	14,932,503	3,913,167	575	15,690	6,109	8,572	1,282	6,606,591
1960	4,120	15,038,264	15,408,204	4,532,614	517	15,839	7,202	9,074	1,403	7,233,753
1961	4,123	16,537,848	15,551,297	4,833,228	469	16,082	*7,908	9,283	1,598	8,546,731
1962	(k)3,851	17,803,809	15,763,256	5,342,311	(l) 558	16,153	8,315	9,754	1,687	8,962,424
1963	(k)3,797	16,714,514	15,574,756	4,792,753	552	16,569	8,964	10,868	1,528	8,251,694

(a) From 1900, year ended 30th June. (b) Open for general and passenger traffic. (c) From 1942, includes operations of Railway Road Services, which began in November, 1941. (d) From 1900, includes 277 miles of line open for general and passenger traffic. From 1915, year ended 30th June. (e) At end of year; from 1916, at 30th June. From 1935, figures represent pole route mileage. (f) From 1920, year ended 30th June. (g) Figures represent revenue actually collected, and actual payments made, as recorded for Treasury purposes. (h) From 1915, year ended 30th June. (i) Six months ended 30th June. (j) Complete records not available. (k) Decrease due to proclamations of closure issued by authority of the Railways (Cue-Big Bell and other Railways) Discontinuance Act, 1960. (l) Increase due to the transfer of all government-operated timber railways to private control. * Revised.

MOTOR VEHICLE REGISTRATIONS; EXPORTS OF WOOL

Year	Motor Vehicles—Effective Registrations (a)				Wool Exports (b)			
					Greasy (e)		Scoured	
	Motor Cars (c)	Utilities, Vans and Trucks (d)	Omnibuses	Motor Cycles	Quantity	Value	Quantity	Value
					lb.	£	lb.	£
1840					50,000	2,500		
1850					309,640	15,482		
1860					656,815	49,261	(f)	(f)
1870					1,787,812	89,390		
1880					4,342,606	271,412		
1890					6,969,380	261,352		
1900					8,658,343	252,535	436,400	18,183
1901					12,867,770	348,502	711,193	29,633
1902					12,484,361	429,150	447,910	28,928
1903					12,501,804	416,726	405,261	27,017
1904					11,914,085	399,498	299,550	19,897
1905	n.a.				17,033,579	571,632	349,509	23,240
1906					14,678,076	578,364	363,528	24,716
1907					19,914,451	791,485	295,782	20,603
1908					20,302,976	619,715	440,069	17,293
1909					26,430,526	975,287	714,053	37,353
1910		n.a.	n.a.	n.a.	25,777,153	946,976	420,056	19,894
1911					24,981,375	917,517	175,818	7,933
1912					27,901,770	1,026,041	225,330	9,625
1913					25,504,884	966,513	227,465	10,305
1914					(g)4,845,635	(g) 180,421	(g) 35,436	(g) 1,618
1915					23,905,597	812,869	99,210	4,761
1916					28,868,646	1,258,577	234,808	14,606
1917					24,327,307	1,415,519	77,976	4,772
1918	2,538				10,519,055	528,192	112,967	7,627
1919	2,938				29,022,006	1,887,635	622,550	64,506
1920	3,404				56,284,119	3,608,849	3,316,416	328,257
1921	4,181				42,047,567	2,296,593	1,083,810	91,526
1922	4,403				54,511,990	2,836,610	4,180,513	365,535
1923	7,280				39,275,458	2,993,029	2,650,590	239,567
1924	11,162				42,358,624	4,014,014	1,516,384	223,138
1925	15,261				33,722,363	3,514,835	1,293,383	221,465
1926	20,011				48,023,588	3,351,405	1,665,500	176,460
1927	19,451	5,741	78		52,130,709	3,347,220	1,656,846	171,093
1928	24,205	7,971	133		60,401,951	4,866,755	838,905	95,802
1929	27,174	9,516	251		56,202,277	3,807,439	843,409	103,302
1930	31,130	11,096	262	7,707	61,777,499	2,711,016	1,024,994	68,097
1931	27,741	10,571	309	6,777	69,397,449	2,325,894	1,385,684	60,644
1932	28,608	11,802	292	6,700	64,591,198	2,269,826	1,965,598	75,744
1933	27,969	12,344	282	6,700	68,191,868	2,435,668	2,695,264	117,924
1934	28,761	13,642	295	6,284	69,997,609	4,565,408	2,728,112	245,438
1935	30,578	15,179	351	6,597	80,550,382	3,239,585	3,451,156	174,004
1936	32,329	17,028	334	6,861	78,487,989	4,446,016	3,081,405	225,720
1937	34,180	19,600	319	6,977	58,323,998	3,926,932	2,447,923	237,501
1938	36,386	22,273	323	7,079	53,451,966	2,938,571	2,705,782	222,969
1939	38,039	24,163	278	7,199	68,408,797	3,035,899	3,605,920	234,681
1940	38,907	24,745	281	6,789	65,279,119	3,801,266	3,648,086	330,609
1941	36,995	24,493	295	6,704	19,982,826	1,300,647	2,798,895	258,938
1942	29,022	21,341	284	4,057	75,738,857	4,918,206	4,927,597	514,835
1943	29,750	20,869	320	3,935	28,513,716	2,081,357	2,731,336	297,170
1944	30,295	22,183	276	4,324	68,663,427	5,420,995	4,618,630	458,592
1945	30,635	23,649	294	4,501	52,057,795	4,041,137	4,885,497	512,302
1946	31,408	28,590	314	6,799	108,180,425	8,567,873	11,746,396	1,389,157
1947	32,879	31,762	335	8,199	75,186,771	7,780,467	17,456,798	2,479,906
1948	35,596	34,822	463	8,877	80,204,830	13,900,549	16,072,580	2,721,435
1949	40,119	38,247	654	10,974	85,919,353	18,358,654	13,588,435	3,176,250
1950	48,632	42,370	836	12,897	83,405,237	20,035,466	17,490,562	5,426,116
1951	56,235	46,964	944	14,535	80,731,643	48,246,541	11,054,717	8,032,936
1952	64,277	51,645	982	16,047	91,455,408	28,645,328	11,352,904	5,194,466
1953	69,917	55,420	1,025	15,565	100,908,701	33,879,266	12,603,629	5,681,628
1954	78,312	59,257	1,105	15,243	100,701,099	35,672,828	11,918,274	5,457,140
1955	90,255	62,753	1,117	14,662	96,554,322	29,648,228	13,261,323	5,633,302
1956	99,206	62,809		12,959	113,289,040	28,947,217	16,744,513	6,209,713
1957	104,506	63,315		12,731	108,581,711	35,625,655	18,746,141	8,129,332
1958	111,825	63,598		12,631	96,452,609	28,612,208	18,557,014	7,730,971
1959	119,957	65,588		12,814	111,130,597	23,156,358	21,763,475	6,112,115
1960	130,476	68,702		12,876	111,103,757	29,068,444	27,429,926	9,910,131
1961	141,612	70,974		12,589	131,902,870	29,644,979	26,127,998	7,775,992
1962	155,447	74,224		12,390	136,894,452	34,088,411	25,330,685	7,844,197
1963	(h)	(h)		(h)	131,432,619	33,200,558	25,222,347	7,852,938

" n.a." denotes " not applicable " or " not available."

(a) From 1929, at 30th June ; for earlier years, at various dates. For years before 1946, excludes Commonwealth-owned vehicles ; from 1946, includes Commonwealth-owned vehicles other than those of defence services. From 1956, break in series ; figures from 1956 to 1962 have been adjusted to conform to the results of the Censuses of Motor Vehicles as at 31st December, 1955 and 31st December, 1962. (b) From 1915, year ended 30th June. (c) From 1956 includes station wagons, previously included with utilities, vans and trucks. (d) *See* note (c). (e) For 1890 and earlier years includes scoured wool for which figures are not available separately. (f) *See* note (e). (g) Six months ended 30th June. (h) Not available at time of publication.

EXPORTS OF CERTAIN COMMODITIES—*continued*

Year (a)	Wheat		Meats, Frozen and Chilled					
			Beef and Veal		Mutton and Lamb		Pork	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	bushels	£	lb.	£	lb.	£	lb.	£
1860	37	10						
1870								
1880	15,400	3,850						
1890								
1900	1,074	181	(b)	(b)	(b)	(b)	(b)	(b)
1901	105	21	(b)	(b)	(b)	(b)	(b)	(b)
1902								
1903								
1904	9,680	1,580						
1905	46,733	7,973	(b)	(b)	(b)	(b)	(b)	(b)
1906	38	7			15,812	292		
1907	490,350	96,675			369,958	5,586		
1908	211,800	45,005			95,235	1,366		
1909	624,660	129,025					722	23
1910	2,014,552	406,326						
1911	2,231,393	386,922						
1912	502,475	100,148						
1913	4,105,900	763,798					48	
1914(c)	7,286,118	1,343,856						
1915	20	10						
1916	3,930,900	1,023,362	4,311,087	87,831	40,912	802		
1917	7,036,262	1,619,630						
1918	1,693,937	437,709	1,187,915	17,929	114,820	1,969	323,641	7,407
1919	1,651,182	399,979	239,033	3,247	138,224	2,123	132,662	3,237
1920	9,151,125	2,541,698	661,965	16,431				
1921	6,576,405	2,930,179	5,762,126	123,978	117,816	3,652	44,807	2,386
1922	10,357,245	3,037,997	2,478,848	39,400				
1923	5,362,817	1,471,100	9,954,698	152,349	865,510	27,432	1,413	82
1924	10,925,377	2,542,626	10,646,717	135,938	445,926	12,825		
1925	14,985,953	5,158,020	7,106,375	99,052				
1926	13,174,678	4,186,714	8,118,705	120,117				
1927	16,329,668	4,667,095	6,696,652	99,020				
1928	26,193,707	6,994,528	11,026,131	136,082	227,261	7,675		
1929	26,091,098	6,692,046	9,313,392	112,765				
1930	24,953,238	6,129,218	11,381,415	136,242				
1931	42,440,195	5,288,252	11,315,154	122,143	854,608	17,298	208,960	3,546
1932	36,867,683	5,323,740	11,239,948	117,649	2,113,217	51,315	1,220,708	26,502
1933	30,694,720	4,661,276	14,406,036	138,141	383,855	7,271	948,667	18,331
1934	23,359,750	3,417,230	12,602,428	117,189	1,352,172	24,428	667,564	14,749
1935	24,935,638	3,921,897	12,072,230	116,327	4,978,521	118,228	1,193,912	27,345
1936	14,897,053	2,803,358	17,036,178	160,323	5,557,094	141,230	1,550,285	32,313
1937	13,780,400	3,627,352	11,226,986	124,567	4,554,709	123,485	1,305,864	33,549
1938	22,038,207	4,833,666	11,444,720	157,004	8,704,973	234,754	822,723	26,106
1939	22,613,525	3,027,703	16,501,339	248,321	11,774,994	318,927	1,278,045	39,883
1940	15,330,423	2,334,344	10,638,900	164,476	10,284,974	266,329	4,990,211	161,758
1941	14,855,703	2,928,876	12,308,601	203,581	9,691,373	248,231	13,260,644	425,718
1942	9,774,348	2,010,536	7,883,141	163,331	8,122,379	217,309	10,295,031	341,049
1943	5,137,852	1,055,423	408	29	8,785,353	228,860	2,320,707	77,376
1944	12,056,630	2,906,348	3,184,931	94,923	14,691,304	381,370	3,456,855	119,123
1945	23,589,598	7,477,402	2,651,186	84,146	8,824,161	204,844	3,740,724	127,203
1946	13,510,257	5,848,105	9,517,061	278,907	5,001,813	137,530	7,497,152	272,570
1947	6,802,465	4,481,773	14,016,681	345,301	8,997,059	204,434	2,879,603	123,915
1948	19,311,637	16,904,259	14,006,848	301,938	11,197,846	292,167	668,757	26,604
1949	18,401,445	14,049,810	17,760,205	420,214	10,156,809	354,124	1,374,622	89,554
1950	21,510,390	16,692,007	19,015,413	591,603	5,274,277	242,556	358,571	29,646
1951	30,510,360	25,843,951	16,973,192	610,600	2,070,449	108,603	616,359	56,424
1952	26,822,885	22,864,041	13,289,965	567,712	2,300,953	150,526	933,788	116,212
1953	23,318,935	20,173,406	11,058,475	718,691	14,527,244	731,536	1,019,862	151,736
1954	6,800,140	5,635,764	13,555,097	873,785	7,294,910	437,440	474,349	76,077
1955	19,334,742	13,738,962	14,939,112	1,018,832	7,108,748	664,048	2,313,361	266,129
1956	22,773,235	14,429,864	16,757,378	1,171,613	14,556,055	1,077,932	1,636,927	241,145
1957	46,796,467	30,645,638	(d) 9,099,452	(d) 610,557	12,761,112	870,612	1,614,923	293,885
1958	26,643,941	20,430,624	(d)24,304,729	(d)1,651,190	11,204,637	950,096	5,123,833	730,765
1959	23,503,275	16,556,265	23,226,399	2,171,044	21,923,136	1,588,442	4,371,464	589,144
1960	36,713,316	24,720,759	29,977,441	3,370,933	19,258,489	1,188,829	2,617,978	476,409
1961	52,480,005	35,639,958	27,365,093	3,070,662	25,059,136	1,950,668	4,175,737	750,361
1962	73,882,791	52,178,050	27,654,089	3,149,718	18,668,516	1,217,874	6,946,472	1,012,611
1963	50,720,419	36,098,464	38,069,090	4,691,231	16,375,824	1,200,352	4,543,363	701,813

(*a*) From 1915, year ended 30th June. (*b*) Separate particulars not available. Total exports of fresh meats were 184,379 lb. valued at £4,582 in 1900 ; 244,009 lb. valued at £6,154 in 1901 ; 8,775 lb. valued at £198 in 1905. (*c*) Six months ended 30th June. (*d*) Figures for 1956–57 exclude, and those for 1957–58 include, a shipment of 6,776,366 lb. valued at £446,551 exported overseas during 1956–57 but not recorded until 1957–58.

EXPORTS OF CERTAIN COMMODITIES—*continued*

Year (*a*)	Flour (*b*)		Butter (*b*)		Potatoes (*b*)		Fresh Fruit(*c*)(*d*)	Cattle	Sheep
	Quantity	Value	Quantity	Value	Quantity	Value	Value	Value	Value
	short tons (*e*)	£	lb.	£	tons	£	£	£	£
1850			(*f*)	18	(*f*)	96		24	118
1860	12	220			70	630			2,200
1870					26	172			240
1880	(*f*)	1,231							102
1890								483	831
1900	48	400			111	649	414	18	1,039
1901	44	413			74	641	682	10	1,954
1902					24	148	20	10,836	2,328
1903					2	20	15		65
1904	5	41	240	8	1	6	12		922
1905	114	877			9	80	121	100	1,313
1906	24	199			35	388	238	113	931
1907	4,087	34,565					925	600	42
1908	528	5,066	326	18	61	448	2,262	315	155
1909	1,088	10,575	547	32	126	941	2,157	117	436
1910	3,082	25,427	124	9	81	709	5,506	7,845	4,363
1911	7,270	54,565	11,844	500	64	844	16,103	33,283	8,441
1912	15,591	121,730	39,943	2,205	712	7,396	33,396	51,358	11,076
1913	29,851	239,840	48,505	2,546	242	2,162	32,274	72,950	15,430
1914 (*g*)	18,273	158,066	20,893	1,138	135	960	8,280	29,677	3,111
1915	2,986	27,186	25,533	1,613	301	2,806	46,417	37,468	5,676
1916	17,309	218,389	33,719	2,353	906	10,352	22,236	70,845	4,359
1917	37,972	424,362	53,061	3,920	399	3,848	82,014	22,533	2,016
1918	58,066	693,577	313,140	25,607	165	2,107	35,689	88,597	14,590
1919	105,453	1,294,482	199,415	17,766	555	7,027	57,021	9,016	21,948
1920	129,491	2,526,620	137,370	13,785	1,982	34,934	150,087	36,517	13,839
1921	53,452	1,075,082	86,745	10,396	712	8,583	121,335	21,907	11,510
1922	56,248	1,024,632	61,003	5,793	859	8,533	176,104	47,917	34,766
1923	59,875	670,909	27,176	2,544	2,097	23,075	237,940	59,065	22,474
1924	78,217	824,743	45,947	3,887	4,011	53,989	188,947	30,170	19,772
1925	75,407	968,501	33,334	2,765	919	6,547	246,535	2,255	3,976
1926	92,097	1,294,311	37,700	3,400	2,056	28,549	232,149	14,848	15,635
1927	94,329	1,161,324	29,876	2,833	2,004	29,528	334,272	16,199	24,922
1928	85,398	1,008,168	23,418	2,364	801	10,489	191,915	34,917	29,102
1929	79,865	892,323	99,505	9,101	1,641	20,938	533,354	18,959	25,753
1930	69,274	772,715	66,899	5,517	5,387	81,070	156,194	343	22,963
1931	85,966	635,518	41,944	2,082	5,301	26,925	302,085	1,435	12,590
1932	88,631	580,729	1,455,042	89,199	1,065	10,457	430,738	1,394	13,768
1933	86,434	554,519	2,297,431	139,917	850	4,880	332,273	680	17,574
1934	64,830	392,269	2,220,130	98,435	2,000	10,853	369,515	35	13,024
1935	86,160	564,945	2,316,638	75,111	2,694	28,091	448,058	466	21,963
1936	66,987	487,353	2,301,397	124,501	8,713	63,497	501,988	501	23,461
1937	86,291	832,860	1,652,308	93,230	7,301	62,741	362,020	667	27,984
1938	81,336	804,706	3,651,258	238,232	5,500	30,933	328,124	177	37,055
1939	89,245	584,397	4,165,717	233,542	15,297	148,427	648,985	341	36,588
1940	91,843	652,163	4,157,400	247,379	12,487	114,358	422,885	125	32,360
1941	118,710	1,093,982	3,883,233	232,158	19,000	196,273	187,332	1,057	56,163
1942	85,156	842,687	3,722,340	216,753	10,940	114,149	122,565	297	48,256
1943	77,802	792,778	477,150	32,770	7,081	81,018	135,670	473	218
1944	107,808	1,183,517	2,144,544	142,588	1,641	23,407	100,012	13,375	69
1945	104,444	1,284,658	2,214,548	192,822	18,377	302,081	119,194	945	348
1946	117,136	2,339,327	2,887,169	255,952	13,768	234,059	406,453	1,085	45,385
1947	129,842	3,818,727	2,089,858	196,769	13,404	250,903	793,621	13,622	181,002
1948	140,306	5,678,840	4,572,333	506,814	18,924	349,876	945,244	4,771	173,565
1949	131,614	5,271,572	4,682,378	535,602	14,529	231,288	882,943	5,542	186,973
1950	116,199	4,178,932	3,527,571	463,601	11,164	217,172	1,116,588	2,714	213,250
1951	160,228	5,900,046	1,285,022	184,056	12,306	284,830	1,404,698	4,373	308,016
1952	161,974	6,851,709	448,120	69,751	15,073	419,979	1,649,465	11,507	315,363
1953	176,630	7,566,057	421,937	78,875	13,568	405,380	2,490,580	11,408	250,749
1954	148,467	5,867,669	442,111	83,953	17,186	699,583	1,841,714	14,265	284,146
1955	120,711	3,623,031	441,157	84,696	9,667	281,648	2,145,042	33,912	306,201
1956	130,519	3,907,810	649,696	122,559	3,354	135,278	2,045,049	88,492	312,345
1957	127,712	3,745,512	445,590	90,412	8,598	428,632	2,499,800	121,370	461,569
1958	111,946	3,456,983	477,856	92,036	14,266	434,002	1,909,399	154,128	420,598
1959	104,754	3,171,608	417,259	89,343	9,172	205,650	1,995,119	197,992	382,125
1960	87,789	2,548,108	421,511	91,580	9,460	217,857	1,421,679	162,420	422,741
1961	135,375	3,919,199	668,777	123,742	7,697	218,537	2,540,449	158,872	440,325
1962	97,951	2,943,981	1,666,239	265,805	10,165	316,100	1,600,175	27,456	627,060
1963	74,397	2,320,337	543,976	114,206	17,747	405,034	2,647,850	80,100	747,741

(*a*) From 1915, year ended 30th June. (*b*) Includes ships' stores for 1958–59 and earlier; from 1959–60 ships' stores are excluded. (*c*) Includes ships' stores. (*d*) Includes tomatoes. (*e*) Short ton = 2,000 lb. (*f*) Not available. (*g*) Six months ended 30th June.

EXPORTS OF CERTAIN COMMODITIES—*continued*

Year (*a*)	Skins and Hides	Timber (*b*)		Crayfish Tails, Frozen (*c*)		Pearl-shell		Petroleum Oils and Spirits (*d*)	
	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	£	'000 sup. ft.	£	lb.	£	cwt.	£	gal.	£
1850	329	126	1,048						
1860	56	658	4,932						
1870	195	2,566	17,571			1,480	9,431		
1880	3,773	7,950	66,253			14,380	39,710		
1890	24,403	14,066	82,052			24,745	86,293		
1900	74,902	68,705	458,036			14,747	86,513		
1901	86,559	85,807	572,047			16,350	105,730		
1902	111,456	75,082	500,533			18,936	138,689		
1903	128,625	95,794	638,867			19,071	174,322		
1904	126,272	96,868	654,120			23,275	124,505		
1905	168,280	104,514	689,011			29,654	146,832		
1906	185,700	105,761	707,789			23,515	142,682		
1907	186,678	76,826	504,985			27,881	169,815		
1908	137,931	118,435	813,618			30,093	190,741		
1909	197,655	129,868	866,758			23,412	174,960		
1910	241,224	144,858	972,325			29,281	246,068		
1911	173,340	149,390	986,187			27,471	240,764		
1912	182,435	135,565	903,396			31,915	421,609		
1913	256,417	163,438	1,089,486			30,419	274,724		
1914 (*e*)	104,475	75,357	502,183			10,143	85,922		
1915	149,931	119,622	808,392			22,806	161,389		
1916	251,822	65,188	442,014			25,045	158,597		
1917	222,506	46,688	310,893			24,000	196,977		
1918	203,738	41,230	273,783			17,267	143,779		
1919	271,951	49,629	332,584			13,253	117,816		
1920	623,029	60,784	465,734			33,505	335,283		
1921	379,674	117,795	1,137,223			23,056	234,936		
1922	365,149	99,707	1,041,047			30,440	253,779		
1923	545,977	94,935	997,471			25,477	214,534		
1924	520,248	133,648	1,367,517			28,479	243,680		
1925	477,437	142,132	1,477,997			23,264	234,349		
1926	441,303	144,017	1,522,958			25,762	232,647		
1927	376,004	157,355	1,657,976			24,502	212,337		
1928	553,144	124,617	1,265,383			19,066	166,065		
1929	550,324	91,623	960,435			21,515	172,376		
1930	369,089	78,957	807,425			19,378	165,700		
1931	269,659	49,534	507,382			20,313	167,218		
1932	197,559	36,752	361,155			12,237	97,237		
1933	239,928	26,826	261,477			20,653	147,025		
1934	385,365	48,730	486,023			16,854	97,930		
1935	319,799	63,913	635,222			19,435	94,336		
1936	530,255	67,178	677,903			19,363	106,948		
1937	571,534	68,087	698,261			18,261	123,388		
1938	492,414	90,549	929,872			24,781	168,106		
1939	367,939	68,451	718,010			22,621	105,880		
1940	372,620	60,595	625,304			16,859	76,306		
1941	289,862	73,094	772,959			13,704	76,433		
1942	386,009	62,697	684,561			11,616	70,846		
1943	173,831	42,272	594,467			120	710		
1944	340,133	43,744	607,986			37	304		
1945	268,699	34,218	565,737						
1946	636,988	40,476	714,621			260	3,789		
1947	1,065,602	41,505	859,636			2,491	60,048		
1948	1,024,151	43,349	1,115,211			6,733	169,896		
1949	1,067,042	38,379	993,152	(*f*)	(*f*)	8,169	183,439		
1950	1,164,551	34,295	974,493	1,143,235	231,659	6,997	123,898		
1951	2,646,890	28,110	891,522	3,165,055	758,706	6,797	137,190		
1952	1,596,931	28,659	1,037,688	2,890,663	930,722	8,205	202,986		
1953	1,970,821	47,585	2,073,593	2,930,255	1,042,296	10,538	305,992		
1954	1,647,443	46,318	2,240,042	3,222,166	1,171,221	12,271	353,780		
1955	1,460,281	41,748	1,923,618	3,376,571	1,244,988	13,785	409,827	64,638,372	3,032,080
1956	1,636,905	54,591	2,799,170	3,529,076	1,510,756	15,954	499,727	332,098,020	16,700,717
1957	(*g*)2,324,774	56,147	3,107,513	3,565,789	1,757,138	21,671	695,728	335,032,510	18,691,677
1958	(*g*)1,949,225	66,872	3,747,932	4,708,161	1,982,535	22,580	690,286	435,461,273	24,377,292
1959	1,744,308	77,561	4,207,482	6,116,632	2,640,650	15,521	386,031	396,537,335	21,597,166
1960	2,383,433	73,601	3,880,226	6,603,858	3,249,611	12,535	353,657	427,135,606	23,733,508
1961	1,914,240	66,412	3,587,740	5,105,607	2,940,348	11,283	251,173	557,264,317	27,459,422
1962	2,289,826	68,059	3,764,104	7,951,778	4,888,904	8,924	160,154	561,273,250	25,319,703
1963	2,169,413	65,811	3,620,408	7,694,085	4,455,138	7,647	144,597	556,418,498	24,839,630

(*a*) From 1915, year ended 30th June. (*b*) Excluding plywood and veneers and small quantities of timber for which no super footage is recorded. For the years 1906 to 1921, figures are approximate. (*c*) Figures for the years 1949–50 to 1951–52 represent oversea exports only and exclude small consignments to other Australian States. Those for 1952–53 and later years include small consignments of cooked whole crayfish to other Australian States. (*d*) A major oil refinery began production in 1954–55. In some earlier years there were small consignments of re-exported products which were of little significance and are not showu. (*e*) Six months ended 30th June. (*f*) Precise information not available, but it is known that the value of exports was about £250,000. (*g*) Figure for 1956–57 excludes, and that for 1957–58 includes, an amount of £11,006 representing the value of a consignment of cattle hides exported during 1956–57 but not recorded until 1957–58.

67709—(15)

EXPORTS OF CERTAIN COMMODITIES—*continued*

Year (*a*)	Gold Bullion (*b*)		Lead (inc. Silver-Lead-Zinc) Ores and Concentrates	Tin Ore and Concentrates	Asbestos (Crude and Fibre)		Manganese Ore and Concentrates		Iron Ore and Concentrates (*d*)	
	Quantity	Value (*c*)	Value	Value	Quantity	Value	Quantity	Value	Quantity	Value
	fine oz.	£	£	£	cwt.	£	tons	£	tons	£
1850			55							
1860			985							
1870			14,514							
1880			15,368							
1890	22,806	86,664	2,135	5,400						
1900	999,770	3,799,116	242	38,178						
1901	1,023,864	3,941,797		39,495		...				
1902	897,434	3,318,958		22,568						
1903	1,106,436	4,061,767		22,856	4	10				
1904	1,061,491	3,939,333		27,118						
1905	777,844	3,292,807		76,778						
1906	691,822	2,930,458		138,634						
1907	538,269	2,272,396	1,866	151,414						
1908	485,245	2,052,400	5,006	83,594						
1909	511,620	2,164,187	2,168	62,989					200	140
1910	333,832	1,417,562	2,058	46,261						
1911	308,720	1,306,272	15,389	55,220					...	
1912	268,973	1,142,523	22,663	79,738			2	4		
1913	198,421	841,384	59,724	72,142						
1914 (*e*)....	60,452	256,271	28,697	24,623						
1915	100,064	413,560	47,391	25,665						
1916	182,670	773,419	10,813	46,183				3		
1917			3,717	56,519						
1918			4,540	55,132	20	25				
1919			3,794	55,850	60	97				
1920	41,296	226,001	51,087	64,401						
1921	66	371	33,385	20,590	2,592	6,666	1	10		
1922				5,087	1,747	4,195	15	135		
1923			23,479	9,080			12	120		
1924	90,523	383,445	53,942	18,770			10	80	2	9
1925	36,117	152,609	93,180	14,635			20	160		
1926	49,619	193,218	92,849	11,740						
1927	91,080	355,426	54,633	13,987			82	503		
1928	14,361	60,651	3,928	12,193			30	303		
1929	10,353	40,283	5,315	14,889					1	1
1930	143	565	9,734	14,612			80	230		
1931			1,183	5,173						
1932	515,491	3,668,221	400	3,079			1	2		
1933	624,910	4,688,074	32	3,407						
1934	652,604	5,311,904	116	5,543						
1935	588,917	5,129,010	25	8,454						
1936	770,561	6,692,639		9,051						
1937	908,818	7,909,423		7,846						
1938	1,074,840	9,298,855	483	9,926	5,533	18,270				
1939	1,169,151	10,620,221	543	5,523	5,352	12,866				
1940	1,167,720	12,027,762	950	6,973	3,703	8,388				
1941	1,202,348	12,547,760	948	5,890	2,911	7,404				
1942	974,835	10,295,050	1,134	2,970	1,460	3,443				
1943	756,349	7,872,227	467	2,551	1,748	4,017				
1944	349,278	3,624,948	436	3,075	1,809	4,220				
1945			742	2,519	7,588	18,221				
1946			179	4,021	21,281	52,192				
1947			2,714	6,060	12,542	32,724				
1948	355,649	3,827,850	72,924	8,523	23,643	74,224				
1949			117,362	15,478	23,200	89,607	1,649	10,863		
1950	76	1,177	135,755	24,659	17,586	102,124	9,550	63,100		
1951			131,607	30,757	30,859	189,063	11,488	77,069		
1952	394,984	6,571,284	684,346	53,471	51,570	354,508	7,898	57,741	51,622	51,191
1953	759,291	12,399,246	840,623	76,655	59,165	494,953	14,330	128,027	543,725	539,275
1954	418,067	6,615,109	137,674	48,507	62,975	492,839	26,839	414,361	583,462	578,602
1955	618,495	9,668,885	58,681	73,189	74,645	394,060	34,085	401,942	579,526	574,653
1956	410,278	6,420,786	448,429	160,836	148,302	719,928	54,905	635,309	472,058	468,127
1957	770,061	12,059,597	489,057	146,327	211,169	1,069,889	58,495	775,672	328,588	324,650
1958	207,665	3,255,698	211,622	82,987	231,142	1,459,827	74,563	1,250,647	438,624	435,182
1959	131,634	2,058,944	125,521	152,008	211,365	1,082,924	56,073	813,874	589,369	584,430
1960	599,571	9,369,203	122,699	207,270	303,263	1,555,747	78,547	1,111,879	796,125	800,706
1961	2,532,438	39,635,738	48,417	162,706	212,120	1,181,942	46,978	633,665	1,508,784	1,273,715
1962	452,624	7,097,361	31,765	281,382	252,940	1,376,584	107,584	1,472,576	1,132,308	1,243,526
1963	416,681	6,524,032	16,561	265,991	248,212	1,399,440	52,112	694,800	1,497,227	1,500,095

(*a*) From 1915, year ended 30th June. (*b*) Gold sold abroad before consignment is not recorded as an export until actually shipped. (*c*) Australian currency value, including additional premiums on sales of industrial gold. (*d*) From 1959–60, includes pyritic cinders. (*e*) Six months ended June.

EXTERNAL TRADE

Year (a)	Imports			Exports (b)			Excess of—	
	Oversea	Interstate	Total	Oversea	Interstate	Total	Imports	Exports
	£	£	£	£	£	£	£	£
1850	(c)	(c)	62,351	(c)	(c)	22,135	40,216	
1860	159,068	10,007	169,075	80,892	8,355	89,247	79,828	
1870	129,948	83,311	213,259	177,217	23,768	200,985	12,274	
1880	174,542	179,127	353,669	371,594	127,589	499,183		145,514
1890	512,608	361,839	874,447	484,623	187,190	671,813	202,634	
1900	3,287,022	2,675,156	5,962,178	5,727,023	1,125,031	6,852,054		889,876
1901	3,895,151	2,559,020	6,454,171	7,941,001	574,622	8,515,623		2,061,452
1902	5,171,651	2,046,701	7,218,352	8,252,608	798,750	9,051,358		1,833,006
1903	4,228,554	2,541,368	6,769,922	9,458,125	866,607	10,324,732		3,554,810
1904	4,021,953	2,650,527	6,672,480	9,912,432	359,057	10,271,489		3,599,009
1905	3,769,395	2,712,479	6,481,874	9,059,162	811,857	9,871,019		3,389,145
1906	3,780,495	3,040,438	6,820,933	9,059,290	773,389	9,832,679		3,011,746
1907	3,587,548	2,935,450	6,522,998	8,655,279	1,249,581	9,904,860		3,381,862
1908	3,212,021	2,966,176	6,178,197	8,603,129	914,891	9,518,020		3,339,823
1909	3,322,390	3,084,570	6,406,960	6,799,957	2,060,537	8,860,494		2,453,534
1910	4,375,118	3,533,268	7,908,386	5,486,178	2,813,603	8,299,781		391,395
1911	4,485,369	4,160,569	8,645,938	9,307,894	1,298,969	10,606,863		1,960,925
1912	5,317,468	4,232,989	9,550,457	7,779,653	1,161,355	8,941,008	609,449	
1913	5,407,714	4,484,991	9,892,705	5,256,160	3,872,447	9,128,607	764,098	
1914 (d)	2,556,145	2,127,796	4,683,941	2,968,415	2,241,133	5,209,548		525,607
1915	3,986,198	4,315,082	8,301,280	3,255,046	2,097,094	5,352,140	2,949,140	
1916	4,169,109	4,813,891	8,983,000	4,659,232	3,381,252	8,040,484	942,516	
1917	4,386,387	4,998,623	9,385,010	4,922,261	9,760,766	14,683,027		5,298,017
1918	2,505,271	5,143,962	7,649,233	4,402,337	1,404,998	5,807,335	1,841,898	
1919	3,140,514	4,883,476	8,023,990	9,752,107	1,170,568	10,922,675		2,898,685
1920	4,959,062	7,409,269	12,368,331	14,864,356	1,204,434	16,068,790		3,700,459
1921	7,219,538	7,619,703	14,839,241	10,887,099	1,371,540	12,258,639	2,580,602	
1922	4,308,141	7,729,638	12,037,779	11,360,651	2,268,232	13,628,883		1,591,104
1923	6,500,336	7,277,343	13,777,679	9,973,545	1,131,675	11,105,220	2,672,459	
1924	6,662,729	7,681,416	14,344,145	12,651,541	1,471,748	14,123,289	220,856	
1925	8,026,452	8,047,583	16,074,035	13,344,297	1,320,251	14,664,548	1,409,487	
1926	7,896,174	8,566,398	16,462,572	13,136,234	1,445,423	14,581,657	1,880,915	
1927	9,447,035	8,929,028	18,376,063	13,736,608	1,415,351	15,151,959	3,224,104	
1928	9,011,304	9,276,329	18,287,633	16,895,934	1,344,841	18,240,775	46,858	
1929	9,453,177	10,600,595	20,053,772	15,970,043	1,215,911	17,185,954	2,867,818	
1930	8,878,894	9,902,762	18,781,656	16,657,297	1,112,232	17,769,529	1,012,127	
1931	4,582,259	6,819,593	11,401,852	17,156,569	818,933	17,975,502		6,573,650
1932	3,463,042	7,926,858	11,389,900	15,344,910	951,176	16,296,086		4,906,186
1933	4,770,809	8,370,113	13,140,922	14,541,835	995,577	15,537,412		2,396,490
1934	4,444,451	9,276,956	13,721,407	16,041,255	1,250,322	17,291,577		3,570,170
1935	5,101,564	10,145,154	15,246,718	15,530,079	1,349,089	16,879,168		1,632,450
1936	6,343,756	11,036,626	17,380,382	17,032,041	1,859,638	18,891,679		1,511,297
1937	7,071,953	12,370,797	19,442,750	17,766,822	3,224,311	20,991,133		1,548,383
1938	7,992,928	12,939,671	20,932,599	20,014,725	3,085,812	23,100,537		2,167,938
1939	6,137,429	12,664,528	18,801,957	17,566,632	5,439,778	23,006,410		4,204,453
1940	6,283,825	13,724,895	20,008,720	10,286,137	14,290,617	24,576,754		4,568,034
1941	4,855,208	13,759,522	18,614,730	9,423,498	15,415,981	24,839,479		6,224,749
1942	5,195,617	13,054,920	18,250,537	12,709,012	12,642,472	25,351,484		7,100,947
1943	3,691,342	12,401,738	16,093,080	6,275,884	10,086,119	16,362,003		268,923
1944	3,885,219	13,314,118	17,199,337	12,756,612	6,775,534	19,532,146		2,332,809
1945	4,607,621	13,431,736	18,039,357	13,569,364	5,833,669	19,403,033		1,363,676
1946	5,509,155	16,118,994	21,628,149	20,666,776	5,878,104	26,544,880		4,916,731
1947	9,464,393	21,126,704	30,591,097	23,939,584	5,780,431	29,720,015	871,082	
1948	17,155,304	25,664,477	42,819,781	49,909,804	5,821,426	55,731,230		12,911,449
1949	22,037,601	30,591,245	52,628,846	50,819,268	4,774,572	55,593,840		2,964,994
1950	34,421,791	35,021,886	69,443,677	55,528,101	6,337,535	61,865,636	7,578,041	
1951	40,258,414	47,914,007	88,172,421	102,196,423	9,661,458	111,857,881		23,685,460
1952	60,237,006	62,104,414	122,341,420	79,550,994	18,141,533	97,692,527	24,648,893	
1953	29,874,195	68,606,336	98,480,531	87,851,541	25,281,263	113,132,804		14,652,273
1954	42,525,263	82,687,077	125,212,340	71,648,690	20,003,918	91,652,608	33,559,732	
1955	50,647,713	91,054,828	141,702,541	72,039,222	24,054,872	96,094,094	45,608,447	
1956	46,481,702	88,975,963	135,457,665	81,035,350	34,636,448	115,671,798	19,785,867	
1957 (e)	40,211,566	94,339,914	134,551,480	114,327,916	41,194,941	155,522,857		20,971,377
1958 (e)	45,887,718	97,551,686	143,439,404	95,193,051	40,283,618	135,476,669	7,962,735	
1959	44,985,964	101,214,984	146,200,948	91,800,931	34,691,997	126,492,928	19,708,020	
1960	46,181,555	123,347,757	169,529,312	120,068,508	38,929,952	158,998,460	10,530,852	
1961	55,265,529	122,736,906	178,002,435	159,538,482	45,230,638	204,769,120		26,766,685
1962	50,088,978	122,603,860	172,692,838	148,498,674	42,313,053	190,811,727		18,118,889
1963	56,319,865	156,855,860	213,175,725	127,363,231	45,818,231	173,181,462	39,994,263	

(a) From 1915, year ended 30th June. (b) Includes ships' stores. (c) Not available. (d) Six months ended 30th June. (e) An amount of £504,450, representing the value of a shipment of goods exported overseas in 1956–57 but not recorded until 1957–58, is excluded from 1956–57 and included in 1957–58.

LAND TENURE ; LIVESTOCK ; WOOL PRODUCTION

Year	Land Alienated and Land in Process of Alienation (*a*)	Land held under Lease or Licence (*a*) (*b*)	Livestock (*c*)				Wool Production (*d*)	
			Horses	Cattle	Sheep	Pigs	Quantity	Gross Value (*e*)
	acres	acres					lb.	£
1829	525,000		57	204	1,469	109	(*f*)	
1830	633,345		101	583	7,981	66	(*f*)	
1840	1,597,697		506	2,318	30,961	1,533	(*f*)	
1850	1,329,821	(*f*)	2,635	13,074	128,111	3,190	(*f*)	
1860	1,515,700	5,563,023	9,555	32,476	260,136	10,991	657,000	(*f*)
1870	1,465,118	12,239,111	22,174	45,213	608,892	12,927	1,788,000	
1880	2,124,701	44,919,631	34,568	63,719	1,231,717	24,232	4,343,000	
1890	5,333,611	104,742,419	44,384	130,970	2,524,913	28,985	6,969,000	
1900	6,619,288	87,375,981	68,253	338,590	2,434,311	61,740	9,531,000	
1901	9,585,144	97,455,927	73,710	398,547	2,625,855	61,052	15,305,000	414,510
1902	9,856,592	112,137,932	80,158	437,136	2,704,880	52,883	14,633,000	503,009
1903	10,548,057	135,678,571	82,747	497,617	2,600,633	50,209	14,645,000	488,167
1904	11,558,308	139,854,318	90,225	561,490	2,853,424	70,299	13,964,000	468,376
1905	12,380,035	145,769,592	97,397	631,825	3,120,703	74,567	19,523,000	654,834
1906	12,575,902	152,527,740	104,922	690,011	3,340,745	56,203	17,438,000	687,348
1907	13,070,006	160,180,142	113,330	717,377	2,684,974	53,399	22,014,000	875,057
1908	14,002,939	161,218,973	116,795	741,788	4,097,324	46,652	22,451,000	685,691
1909	16,252,397	166,857,911	125,315	793,217	4,731,737	47,062	30,048,000	1,109,272
1910	17,329,521	167,207,804	134,114	825,040	5,158,516	57,628	29,123,000	1,070,270
1911	19,045,932	169,937,588	140,277	843,638	5,411,542	55,635	29,644,000	1,091,887
1912	20,793,298	175,629,991	147,629	806,294	4,596,958	47,351	25,380,000	934,830
1913	21,362,546	188,547,364	156,636	834,265	4,421,375	47,966	25,026,000	950,988
1914	21,648,949	184,220,512	161,625	863,835	4,456,186	59,816	24,419,000	909,608
1915	22,087,323	189,742,326	163,016	821,048	4,803,850	58,231	29,713,000	1,303,660
1916	21,709,705	196,706,909	169,730	863,930	5,529,960	90,756	33,093,000	1,963,050
1917	21,560,805	192,437,243	178,151	927,086	6,384,191	111,844	40,334,743	2,417,649
1918	21,567,713	208,048,942	180,094	943,847	7,183,747	85,863	45,733,978	3,077,307
1919	21,843,426	245,404,541	174,919	880,644	6,697,951	58,155	41,594,124	2,684,695
1920	23,022,820	257,609,971	178,664	849,803	6,532,965	60,581	41,772,372	2,275,772
1921	24,232,047	258,503,929	180,334	893,108	6,506,177	63,001	43,081,960	2,240,786
1922	25,756,107	267,619,560	181,159	939,596	6,664,135	67,561	40,861,683	3,146,871
1923	27,064,666	262,146,805	181,944	953,764	6,595,867	61,478	45,285,052	4,332,628
1924	28,342,629	209,936,847	175,116	891,564	6,396,564	66,375	43,423,989	4,575,624
1925	28,901,792	232,991,598	170,563	835,911	6,861,795	74,316	48,288,461	3,399,856
1926	30,277,669	230,562,420	166,463	827,303	7,458,766	69,798	55,131,972	3,573,815
1927	31,740,177	234,160,075	165,021	846,735	8,447,480	59,810	62,702,013	5,084,870
1928	33,322,223	237,428,216	160,876	837,527	8,943,002	49,243	58,865,734	4,013,385
1929	35,398,760	243,723,857	159,528	836,646	9,556,823	64,522	67,150,720	2,976,144
1930	36,039,118	245,389,756	156,973	812,844	9,882,761	100,664	71,541,885	2,414,433
1931	36,208,840	216,626,973	156,489	826,532	10,098,104	120,521	71,614,145	2,503,280
1932	35,869,310	206,162,014	157,443	857,473	10,417,031	117,529	75,147,012	2,598,930
1933	35,546,902	198,325,118	159,646	885,669	10,322,350	91,213	78,424,200	4,701,766
1934	35,089,664	200,587,868	161,636	911,940	11,197,156	97,997	89,991,658	3,210,784
1935	34,117,635	203,601,662	160,181	882,761	11,082,972	98,026	85,706,700	4,443,118
1936	32,995,173	203,961,422	155,177	792,508	9,007,535	76,451	63,537,200	3,652,879
1937	33,002,808	205,059,057	151,067	740,241	8,732,076	64,598	64,739,400	2,915,858
1938	33,008,899	205,992,155	143,679	767,680	9,177,531	82,922	72,475,000	2,724,967
1939	32,767,548	205,705,440	139,207	799,175	9,574,433	149,604	75,400,000	3,790,436
1940	32,437,094	209,379,761	130,057	788,928	9,516,272	217,910	71,347,000	3,944,264
1941	32,109,627	209,958,332	124,402	839,731	9,772,780	163,196	77,627,000	4,164,150
1942	31,863,907	211,535,790	112,782	831,231	10,424,385	151,958	95,718,000	5,967,440
1943	31,657,609	212,038,518	106,743	870,939	11,012,936	163,876	102,759,000	6,370,720
1944	31,621,961	212,696,361	96,528	852,563	10,049,587	163,993	84,140,600	5,255,927
1945	31,719,182	212,330,824	88,180	833,567	9,765,983	137,872	82,067,200	5,211,793
1946	31,781,189	212,162,893	80,746	811,949	9,787,002	101,719	80,524,106	8,046,766
1947	32,082,825	213,884,634	74,537	815,610	10,443,798	93,180	89,527,502	14,638,444
1948	31,856,991	217,806,958	68,521	864,131	10,872,540	80,689	93,769,073	18,860,207
1949	32,279,956	223,691,026	59,166	864,936	10,923,167	79,126	92,750,214	23,618,672
1950	32,777,616	226,005,162	55,340	841,204	11,361,908	89,910	102,910,530	59,033,937
1951	33,981,017	(*b*) 203,939,527	53,347	851,534	12,187,752	86,224	116,142,000	32,013,526
1952	34,765,922	205,606,700	50,241	846,261	12,474,672	76,195	120,726,000	37,560,721
1953	35,860,812	206,437,832	48,770	829,694	13,087,108	100,912	128,964,000	41,283,337
1954	37,236,541	206,566,189	46,886	860,574	13,411,282	107,039	124,173,000	33,992,564
1955	37,825,582	208,640,147	45,491	896,897	14,128,168	99,097	149,764,000	34,820,947
1956	38,229,558	216,317,679	44,660	957,175	14,886,549	139,982	148,374,000	45,141,623
1957	38,564,232	216,810,793	43,930	997,173	15,723,963	150,783	151,026,000	37,614,085
1958	39,258,847	221,763,493	41,286	999,832	16,215,244	115,446	157,358,000	29,703,679
1959	39,717,801	227,600,085	40,740	1,030,469	16,411,589	130,933	160,892,000	37,650,791
1960	40,102,709	227,649,863	40,397	1,100,430	17,151,384	175,675	182,217,000	36,931,411
1961	40,616,527	231,805,694	39,635	1,218,432	18,313,879	174,182	183,334,000	39,641,292
1962	41,467,998	240,036,747	38,840	1,297,746	18,727,124	130,791	177,176,000	40,035,703

(*a*) From 1906, at 30th June ; for earlier years, at 31st December. (*b*) Comprises allocations by Lands Department and certain leases and licences issued by Mines and Forests Departments. Apparent decrease in 1951 due mainly to revisions in records of Lands Department. (*c*) At 31st December for 1941 and earlier years ; from 1942, the figures shown relate to 31st March in the following year. (*d*) Includes fellmongered and dead wool but excludes wool exported on skins. For 1947 and earlier, year ended 31st December ; figures shown for 1948 and later are for the year ended 31st March in the following year. (*e*) Figures for 1949 and 1951 to 1955 exclude distributions of profits under the 1939-1945 War-time Wool Disposals Plan aggregating £6,934,967. Separate State figures are not available for distributions made from 1956 to 1958 when payments were virtually completc. (*f*) Not available.

AGRICULTURE

Year (a)	Total Area under all Crops (b)	Area and Production of Principal Grain Crops							
		Wheat				Oats		Barley	
		Area	Production			Area	Production	Area	Production
			Yield per Acre	Total	Gross Value				
	acres	acres	bushels	bushels	£	acres	bushels	acres	bushels
1840	2,921	1,670	20·00	33,400		(c)	(c)	(c)	(c)
1850	7,419	4,416	(c)	(c)		(c)	(c)	(c)	(c)
1860	24,705	13,584	15·34	208,322		507	11,925	2,412	43,465
1870	54,527	26,640	11·89	316,769	(c)	2,095	39,974	5,439	87,750
1880	63,902	27,686	12·00	257,174		1,319	21,104	6,363	89,082
1890	69,678	33,820	13·82	467,389		1,934	38,791	5,322	85,451
1900	201,338	74,308	10·42	774,653	154,931	4,790	86,433	2,536	29,189
1901	217,441	94,709	10·10	956,886	179,416	9,751	163,654	2,669	34,723
1902	229,992	92,398	10·67	985,559	172,473	10,334	167,882	3,783	46,255
1903	283,752	137,946	13·60	1,876,252	304,891	14,568	258,503	3,609	53,227
1904	327,391	182,080	11·06	2,013,237	343,928	13,864	226,318	3,251	37,332
1905	364,704	195,071	11·83	2,308,305	425,594	15,713	283,987	3,665	49,497
1906	460,825	250,283	11·02	2,758,567	543,093	28,363	457,155	3,590	48,827
1907	493,837	279,609	10·46	2,925,690	522,925	46,667	721,753	6,019	76,205
1908	585,339	285,011	8·63	2,460,823	1,216,368	59,461	739,303	7,308	74,433
1909	722,086	448,918	12·48	5,602,368	1,330,562	73,342	1,248,162	8,022	101,673
1910	855,024	581,862	10·14	5,897,540	1,081,216	61,918	776,233	3,369	33,566
1911	1,072,653	612,104	7·12	4,358,904	867,240	77,488	961,385	3,664	37,011
1912	1,199,991	793,096	11·56	9,168,594	1,604,504	127,645	2,015,812	5,626	93,418
1913	1,537,923	1,097,193	12·15	13,331,350	2,332,986	133,625	1,655,681	11,502	167,915
1914	1,867,547	1,376,012	1·91	2,624,190	940,335	96,085	464,943	6,986	24,090
1915	2,189,456	1,734,117	10·52	18,236,355	3,267,347	104,086	1,538,092	10,069	130,870
1916	2,004,944	1,566,608	10·28	16,103,216	3,052,901	122,220	1,689,352	11,105	134,055
1917	1,679,772	1,249,762	7·44	9,303,787	2,209,649	95,666	908,592	5,028	35,761
1918	1,605,088	1,146,103	7·72	8,845,387	2,211,347	141,459	1,499,689	7,982	81,451
1919	1,628,163	1,041,827	10·77	11,222,950	5,330,901	191,931	2,486,918	9,167	116,037
1920	1,804,986	1,275,675	9·60	12,248,080	5,511,636	193,486	2,022,031	10,686	111,405
1921	1,901,680	1,336,228	10·41	13,904,721	3,765,862	162,866	2,019,603	7,894	85,857
1922	2,274,998	1,552,868	8·92	13,857,432	3,493,228	214,269	2,261,863	9,243	107,804
1923	2,323,070	1,656,915	11·42	18,920,271	4,493,564	241,608	2,846,670	8,673	97,779
1924	2,710,856	1,867,614	12·79	23,887,397	7,265,750	318,982	4,241,074	11,606	177,537
1925	2,932,210	2,112,032	9·69	20,471,177	6,418,567	278,344	2,939,380	13,306	158,300
1926	3,324,523	2,571,187	11·68	31,068,600	8,608,591	234,826	2,716,436	13,826	128,136
1927	3,720,100	2,998,523	12·12	36,370,219	9,921,039	235,469	2,922,865	12,138	126,835
1928	4,259,269	3,343,530	10·10	33,790,040	8,236,322	325,827	3,554,609	14,429	189,560
1929	4,566,001	3,568,225	10·95	39,081,183	8,860,518	385,134	4,058,160	23,649	261,870
1930	4,792,017	3,955,763	13·53	53,504,149	6,100,588	274,874	3,292,560	17,236	185,301
1931	3,963,172	3,158,888	13·14	41,521,245	7,215,043	267,894	3,549,636	14,533	164,580
1932	4,262,884	3,389,352	12·33	41,791,866	6,777,190	285,850	3,603,447	13,772	135,243
1933	4,217,260	3,183,216	11·72	37,305,100	6,002,101	342,642	3,949,905	24,534	324,846
1934	3,840,530	2,764,373	9·76	26,985,000	5,061,500	408,810	4,244,322	26,589	237,765
1935	3,726,324	2,540,696	9·18	23,315,417	4,873,641	448,156	4,557,774	31,568	417,627
1936	3,851,876	2,575,283	8·37	21,549,000	5,950,936	463,129	3,445,167	40,092	449,235
1937	4,168,021	3,026,420	11·97	36,224,800	7,414,763	386,112	4,364,370	44,930	584,055
1938	4,683,333	3,412,818	10·79	36,843,600	4,492,003	426,110	4,668,036	74,928	946,287
1939	4,286,935	2,970,411	13·76	40,861,000	7,763,190	452,764	5,315,292	82,721	971,373
1940	3,988,308	2,625,401	8·02	21,060,000	4,323,953	429,177	3,250,314	65,623	725,352
1941	3,816,522	2,653,419	14·13	37,500,000	7,807,300	407,259	5,325,456	68,388	959,364
1942	2,784,034	1,753,178	11·75	20,600,000	5,039,970	342,309	3,611,991	49,502	533,433
1943	2,744,007	1,567,016	10·56	16,550,000	4,765,639	358,129	3,964,032	61,400	723,984
1944	2,756,022	1,515,762	10·51	15,929,000	4,159,287	401,958	3,844,965	76,164	884,433
1945	2,875,048	1,835,780	11·40	20,929,000	7,935,371	396,285	4,080,948	66,386	665,949
1946	3,532,445	2,425,780	9·81	23,800,000	11,024,015	425,032	3,660,792	65,886	519,252
1947	3,936,118	2,760,446	12·50	34,500,000	25,132,282	494,589	5,410,533	63,136	744,522
1948	4,102,348	2,867,517	12·64	36,250,000	21,061,007	531,638	6,998,295	64,205	981,426
1949	4,292,730	2,894,020	13·30	38,500,000	25,669,588	584,603	7,267,965	67,965	967,815
1950	4,532,756	3,185,389	15·66	49,900,000	32,664,123	585,701	7,913,973	59,114	924,741
1951	4,507,924	3,094,536	12·93	40,000,000	29,492,155	656,559	7,689,222	56,574	695,085
1952	4,636,654	2,999,475	11·82	35,458,000	27,596,965	832,170	10,439,880	106,961	1,742,376
1953	4,477,102	2,885,114	13·76	39,700,000	27,711,647	733,122	9,590,643	209,291	2,733,177
1954	5,042,856	2,979,151	11·51	34,300,000	21,827,313	873,588	9,584,559	259,688	2,804,706
1955	5,233,501	2,889,585	18·43	53,250,000	34,419,861	1,090,901	16,515,679	336,966	4,653,050
1956	5,139,098	2,764,486	11·61	32,100,000	22,027,312	1,051,486	10,441,534	343,590	3,750,511
1957	5,510,867	2,957,206	11·19	33,100,000	22,956,217	1,153,492	13,793,026	307,404	3,556,041
1958	6,015,387	3,291,858	17·51	57,650,000	38,819,613	1,329,742	22,585,050	321,493	5,410,217
1959	6,382,121	3,718,596	15·78	58,670,000	41,180,693	1,240,357	19,598,605	421,293	7,079,828
1960	6,756,637	4,021,225	15·89	63,900,000	46,145,119	1,329,804	21,809,848	540,646	8,495,909
1961	6,975,879	4,379,751	15·00	65,700,000	50,011,531	1,230,651	20,186,436	490,572	7,281,533
1962	7,326,848	4,803,797	15·09	72,500,000	(d)53,554,869	1,177,491	18,571,578	390,282	6,056,426

(a) Figures shown for 1942 and earlier are for the year ended last day of February in the following year; those shown for 1943 and later are for the season ended 31st March in the following year (b) Excludes meadow hay.
(c) Not available. (d) Preliminary; subject to revision.

PRIMARY PRODUCTION — MISCELLANEOUS

Year	Hay (all kinds)		Gold Production (*a*)		Coal Production		Average Values f.o.b.	
	Area	Production	Quantity	Value (*b*)	Quantity	Value	Wool (greasy) per lb. (*c*)	Wheat per bushel (*d*)
	acres	tons	fine oz.	£	tons	£	pence	s. d.
1860	6,286	8,099						5 4½
1870	17,173	20,833						
1880	19,563	19,563					(*e*)	5 0
1890	23,183	25,014	20,402	85,664				
1900	104,254	103,813	1,414,311	6,007,611	118,410	54,835		1 6
1901	92,654	89,729	1,703,417	7,235,653	117,836	68,561	6·50	4 0
1902	105,791	94,007	1,871,037	7,947,661	140,884	86,188	8·25	(*f*) 5 2
1903	109,002	121,934	2,064,801	8,770,719	133,427	69,128	8·00	(*f*) 6 4½
1904	105,247	113,794	1,983,230	8,424,226	138,550	67,174	8·05	3 3
1905	124,906	139,380	1,955,316	8,305,654	127,364	55,312	8·05	3 5
1906	149,830	158,112	1,794,547	7,622,749	149,755	57,998	9·46	3 8½
1907	131,056	137,511	1,697,554	7,210,749	142,373	55,158	9·54	3 11½
1908	201,874	170,008	1,647,911	6,999,882	175,248	75,694	7·33	4 3
1909	158,629	195,182	1,595,269	6,776,274	214,302	90,965	8·86	4 1½
1910	175,432	178,891	1,470,632	6,246,848	262,166	113,699	8·82	4 0½
1911	344,032	299,695	1,370,867	5,823,075	249,899	111,154	8·84	3 5½
1912	231,690	255,751	1,282,658	5,448,385	295,079	135,857	8·84	3 11½
1913	246,640	278,585	1,314,043	5,581,701	313,818	153,614	9·12	3 8½
1914	332,037	156,932	1,232,977	5,237,353	319,210	148,684	(*g*) 8·94	3 8½
1915	290,036	395,172	1,210,112	5,140,228	286,666	137,859	8·16	(*f*) 6 11½
1916	240,726	236,989	1,061,398	4,508,532	301,526	147,823	8·46	4 10½
1917	265,899	267,163	970,317	4,121,645	326,550	191,822	13·96	4 8
1918	249,796	250,014	876,511	3,723,183	337,039	204,319	12·05	5 0½
1919	327,498	379,025	734,066	3,748,882	401,713	260,355	15·61	5 4½
1920	266,824	264,244	617,842	3,475,392	462,021	350,346	15·39	7 2
1921	335,561	368,720	553,731	2,953,693	468,817	407,117	13·11	7 4
1922	431,633	457,371	538,246	2,525,811	438,443	381,555	12·49	5 6
1923	329,534	368,122	504,512	2,232,186	420,714	368,949	18·29	5 0½
1924	397,591	448,525	485,035	2,255,927	421,864	363,255	22·74	4 9
1925	391,142	355,269	441,252	1,874,320	437,461	363,203	25·01	6 1
1926	358,487	423,839	437,343	1,857,716	474,819	394,400	16·75	6 3½
1927	357,065	416,707	408,352	1,734,571	501,505	407,967	15·41	5 6½
1928	414,866	421,504	393,408	1,671,093	528,420	420,145	19·34	5 5½
1929	418,698	428,328	377,176	1,602,142	544,720	426,706	16·26	5 0½
1930	398,411	491,595	417,518	1,864,442	501,423	384,758	10·53	4 6½
1931	381,447	453,353	510,572	2,998,137	432,400	336,178	8·04	2 3½
1932	417,435	485,368	605,561	4,403,642	415,720	270,630	8·43	3 1½
1933	479,768	512,439	637,207	4,886,254	458,398	289,806	8·57	3 0½
1934	413,138	462,947	651,338	5,558,873	500,343	278,704	15·65	2 11½
1935	494,495	504,571	649,049	5,702,149	537,188	318,013	9·65	3 2½
1936	478,099	412,982	846,208	7,373,539	565,075	331,565	13·59	3 11½
1937	432,399	450,419	1,000,647	8,743,755	553,509	340,444	16·16	5 6½
1938	408,276	437,809	1,167,791	10,363,023	604,792	375,083	13·19	4 1½
1939	395,639	475,677	1,214,238	11,842,964	557,535	362,811	10·65	2 5½
1940	418,486	375,143	1,191,481	12,696,503	539,427	364,500	13·98	3 0½
1941	325,266	414,115	1,109,318	11,851,445	556,574	389,278	15·62	3 11½
1942	253,150	277,957	848,181	8,865,495	581,176	461,495	15·58	4 1½
1943	282,456	314,359	546,475	5,710,669	531,546	489,721	17·52	4 1½
1944	328,729	338,912	466,265	4,899,997	558,322	583,076	18·95	4 9½
1945	281,410	287,476	468,550	5,010,541	543,363	572,896	18·63	6 4
1946	277,489	280,252	616,964	6,640,069	642,287	730,104	19·01	8 8
1947	229,172	267,901	703,886	7,575,574	730,506	840,249	24·83	13 2
1948	226,779	277,329	664,986	7,156,909	732,938	880,236	41·60	17 6
1949	216,320	272,052	648,426	7,962,808	750,594	972,245	51·28	15 3½
1950	176,990	226,703	610,333	9,466,270	814,352	1,287,749	57·65	15 6½
1951	173,855	211,629	627,779	9,725,343	848,475	1,716,788	143·43	16 11½
1952	227,082	290,296	729,975	11,847,917	830,461	2,457,296	75·17	17 0½
1953	219,171	293,936	823,912	13,299,092	886,182	3,073,073	80·58	17 3½
1954	289,329	305,052	850,540	13,313,618	1,018,343	3,588,818	85·02	16 7
1955	269,439	383,784	842,005	13,374,688	903,792	3,089,311	73·70	14 2½
1956	242,217	288,479	812,380	13,202,400	830,007	2,723,981	61·32	12 8
1957	338,983	385,992	896,681	14,550,893	838,661	2,552,657	78·74	13 1½
1958	332,613	455,160	867,188	14,178,328	870,882	2,280,649	71·20	15 4
1959	319,486	433,201	866,609	14,194,195	911,435	2,356,534	50·01	14 1
1960	284,038	381,010	855,759	14,069,903	922,393	2,439,195	62·79	13 5½
1961	293,549	395,952	871,845	14,292,196	765,740	1,680,259	53·94	13 7
1962	339,833	452,951	859,368	14,057,303	919,112	1,980,778	59·76	14 1½
1963	(*h*)	(*h*)	800,212	13,187,469	902,495	1,985,060	60·63	14 2¾

(*a*) Comprises gold refined at the mint and gold contained in gold-bearing materials exported. (*b*) Australian currency value including amounts, totalling £1,311,002 for the years 1952 to 1963, distributed by the Gold Producers' Association Ltd. from premiums on sales of Western Australian gold. Also includes net subsidy payments by the Commonwealth Government, under the Gold-Mining Industry Assistance Act 1954–1962, totalling £5,059,220 in the years 1955 to 1963. (*c*) From 1915 figures relate to year ended 30th June. (*d*) Prior to 1940 averages generally are based on exports of the previous season's wheat; from 1940 they relate to exports during the year ended 30th June. (*e*) Not available. (*f*) Exports negligible; average Metropolitan Market price shown. (*g*) For six months ended 30th June. (*h*) Not available at time of publication.

VALUES OF PRIMARY PRODUCTION

Year (*a*)	Gross Value of Primary Production (*b*)						Net Value of all Recorded Primary Production (*c*) (*d*)
	Agriculture	Dairying, Poultry and Bee Keeping	Pastoral and Trapping (*c*)	Mining and Quarrying	Forestry	Fishing	
	£	£	£	£	£	£	£
1914	3,097,140	560,766	2,057,735	5,577,097			
1915	6,529,633	586,549	3,030,234	5,528,405			
1916	5,889,663	691,366	3,670,066	5,968,341			
1917	4,256,661	665,963	4,479,482	4,682,723			
1918	4,757,763	698,038	4,544,144	4,303,482			
1919	9,066,281	843,719	4,771,768	3,592,238	(*e*)	(*e*)	(*e*)
1920	8,732,984	1,032,507	4,504,150	3,296,062			
1921	6,926,532	1,132,257	4,016,045	2,922,664			
1922	6,495,948	1,174,851	5,292,235	2,869,254			
1923	7,537,964	1,241,422	6,513,581	2,722,824		320,980	
1924	11,183,727	1,362,914	6,709,662	2,670,086		382,160	
1925	9,574,956	1,253,464	5,768,524	2,505,170	2,063,174	485,250	15,070,085
1926	12,093,686	1,251,495	5,631,168	2,466,581	1,683,505	289,850	16,255,928
1927	13,034,025	1,343,673	7,343,577	2,348,913	1,453,021	258,155	18,114,117
1928	11,942,067	1,467,753	6,750,319	2,294,254	1,231,490	280,453	15,980,365
1929	12,251,902	1,721,388	5,400,037	2,247,942	1,079,265	272,194	13,372,828
1930	8,877,875	1,584,978	4,422,575	2,347,588	904,701	242,633	8,633,090
1931	10,492,701	1,655,262	4,011,531	3,455,446	655,923	213,496	11,911,099
1932	10,247,311	1,669,074	4,028,270	4,845,554	591,410	215,077	12,356,975
1933	9,511,096	1,657,318	6,684,416	5,303,171	823,941	202,970	14,987,947
1934	8,167,869	1,963,338	4,727,974	5,969,261	1,199,693	186,626	14,087,719
1935	8,522,428	1,948,386	6,319,427	6,201,012	1,326,715	185,970	16,175,921
1936	9,435,736	2,084,770	5,718,359	7,913,659	1,515,852	232,272	18,223,562
1937	10,535,740	2,246,941	5,069,745	9,422,688	1,478,636	296,130	19,410,324
1938	8,538,688	2,358,189	4,728,565	11,102,334	1,449,716	280,301	17,987,859
1939	11,598,791	2,427,580	5,800,989	12,517,427	1,329,823	280,914	23,149,838
1940	7,379,974	2,614,995	5,850,496	13,352,883	1,580,207	269,515	20,532,258
1941	11,109,603	2,979,965	6,116,767	12,421,298	1,475,248	239,398	23,229,353
1942	9,052,786	3,831,973	8,172,499	9,487,594	1,638,701	127,355	22,624,032
1943	9,252,670	3,985,399	9,190,361	6,400,676	1,574,929	173,276	21,247,515
1944	10,428,229	4,236,364	7,799,991	5,764,391	1,575,877	165,109	21,138,230
1945	13,155,180	4,354,613	8,114,158	5,898,368	1,678,763	219,068	23,921,207
1946	16,317,320	4,466,485	11,225,456	7,702,257	1,652,657	317,394	30,175,358
1947	32,349,539	4,894,796	18,715,106	8,863,798	1,824,300	567,749	53,603,107
1948	29,392,579	5,981,981	23,385,628	8,771,506	2,012,180	689,438	54,090,950
1949	34,843,016	6,487,739	29,539,589	9,853,665	2,250,678	715,872	65,863,820
1950	43,875,771	7,077,385	66,209,926	12,087,322	3,370,294	824,673	111,022,903
1951	43,395,573	9,388,982	40,221,535	13,487,712	4,258,405	1,252,545	85,501,208
1952	43,563,257	10,644,635	45,549,700	17,984,292	3,577,440	1,642,876	90,561,270
1953	43,266,693	11,163,967	51,087,795	20,498,158	3,839,062	1,903,752	97,103,780
1954	38,582,102	10,880,776	43,884,930	21,325,541	4,057,889	2,191,669	85,175,331
1955	54,854,648	11,216,389	44,826,886	20,599,437	5,236,982	2,457,393	100,213,822
1956	40,085,122	11,620,153	56,580,939	21,367,559	5,152,544	2,781,749	98,374,504
1957	43,646,459	11,750,073	47,146,667	22,191,062	5,523,006	3,264,846	91,538,258
1958	63,335,990	11,418,878	40,882,021	21,797,530	5,451,306	3,909,190	99,995,371
1959	65,525,778	12,347,840	50,271,747	23,243,700	5,459,529	4,310,626	111,947,473
1960	70 001,730	12 958 730	50,814,759	23,551,424	5,541,144	4,284,324	116,234,042
1961	74,382,648	13,200,059	52,910,424	24,267,521	5,551,788	5,344,446	123,933,736
1962 (*f*)	79,022,902	13,693,366	53,828,100	24,707,692	5,438,360	5,609,665	128,136,134

(*a*) Figures generally are for the season or financial period ending in the following year. (*b*) Represents the estimated value of recorded production based on wholesale prices realized at the principal market. (*c*) In addition, the following amounts were paid as interim distribution of profits under the 1939–1945 War-time Wool Disposals Plan: in 1949, £1,814,739; in 1951, £1,814,739; in 1952, £1,162,662; in 1953, £184,052; in 1954, £1,060,230; and in 1955, £898,545. Separate State figures are not available for distributions made from 1956 to 1958 when payments were virtually complete. (*d*) Net value of production is derived by deducting from the gross value all marketing costs and the cost of certain goods (seed, fertilizer, pickling, sprays, dips, fodder, fuel and oil, etc.) used in the processes of production. (*e*) Not available. (*f*) Preliminary; subject to revision.

FACTORIES (a)

Year (b)	Factories	Persons Employed (c)	Salaries and Wages (d)	Output (e)	Net Production (f)	Certain Items of Factory Production							
						Bricks (g)	Cement	Timber from Local Logs (h)	Bacon and Ham	Butter (i)	Beer and Stout	Flour	Electricity Distributed
	No.	No.	£'000	£'000	£'000	'000	tons	'000 sup. ft.	tons	tons	'000 gal.	short tons (j)	'000 kwh.
1897	487	9,689	(k)			36,564		85,053		121	2,818	7,314	
1898	595	9,895	(k)			26,811		103,043		118	3,278	8,460	
1899	603	10,206	1,248			18,565		118,052		132	3,374	10,042	
1900	632	11,166	1,294			25,234		112,693		130	4,015	12,539	
1901	662	12,198	1,455			30,160		122,414		150	4,225	10,278	
1902	702	12,520	1,521	(k)	(k)	37,722		124,005		144	4,780	11,840	
1903	693	12,458	1,480			45,576		126,730		157	4,943	13,711	(k)
1904	793	13,427	1,604			50,332		143,595		197	5,404	20,185	
1905	777	13,481	1,555			44,045		137,250		189	5,144	26,420	
1906	802	13,739	1,622			37,893		136,295		170	5,100	26,977	
1907	791	13,545	1,479			28,666		110,394	(k)	195	4,652	28,353	
1908	774	13,276	1,558	4,479	2,607	23,842		168,414		163	4,312	31,424	
1909	773	13,606	1,590	4,405	2,482	17,833		171,825		185	4,600	24,878	
1910	822	14,894	1,766	5,079	2,736	23,162		174,528		286	4,711	36,818	
1911	880	16,754	2,086	5,932	3,283	28,687		198,977		222	5,113	40,642	23,227
1912	891	17,425	2,290	6,826	3,582	34,432		217,696		200	5,419	49,319	24,704
1913	954	18,372	2,338	7,299	3,762	35,085		218,908		231	5,360	61,997	25,716
1914	989	18,799	2,474	7,222	3,833	34,854		227,297		201	5,544	61,922	27,580
1915	983	15,882	1,936	7,063	3,234	21,667		123,494		320	5,349	32,396	28,131
1916	953	13,844	1,800	7,346	3,147	18,585		100,356		482	5,299	70,912	26,943
1917	944	13,350	1,743	7,662	3,099	17,488		85,218		608	5,018	102,300	30,252
1918	862	13,849	1,863	8,399	3,159	15,672		94,990	1,028	397	5,362	119,876	30,402
1919	922	16,358	2,318	10,287	3,823	21,092		131,477	1,000	445	5,775	141,516	28,083
1920	998	16,942	3,037	13,141	4,854	31,838		137,934	837	544	5,736	120,125	33,336
1921	1,099	18,151	3,568	12,844	5,240	23,548	(m)	183,663	772	684	5,532	82,148	36,086
1922	1,323	18,743	3,713	12,871	5,790	28,509	(m)	179,059	801	678	4,988	94,316	40,556
1923	1,307	19,805	3,865	13,704	6,129	34,864	(m)	192,547	969	766	4,893	107,990	47,973
1924	1,293	21,671	4,337	15,726	6,958	34,930	(m)	207,137	1,164	741	5,196	122,192	55,440
1926 (l)	1,170	20,667	6,588	21,450	9,611	53,336	15,636	328,935	1,875	836	7,593	190,369	99,853
1927	1,216	19,403	4,151	15,672	6,907	45,204	17,050	229,195	1,123	1,100	5,615	133,919	78,139
1928	1,398	20,435	4,501	16,998	7,690	52,992	19,645	227,631	1,157	1,111	6,011	127,246	84,450
1929	1,469	20,913	4,676	17,454	7,969	60,568	20,769	174,324	1,089	1,617	5,934	119,550	92,460
1930	1,466	19,643	4,155	16,891	7,488	47,720	23,276	159,643	1,161	2,109	6,008	120,595	102,411
1931	1,455	14,619	2,887	12,353	5,281	13,630	15,565	112,484	1,300	3,171	5,028	132,090	98,100
1932	1,490	13,392	2,336	11,188	4,606	15,101	16,853	57,690	1,297	3,727	4,366	131,165	119,833
1933	1,499	14,810	2,541	12,328	5,062	25,673	24,357	59,254	1,542	4,224	4,689	127,574	138,094
1934	1,606	16,154	2,753	12,877	5,444	31,717	27,746	96,428	1,901	4,386	5,450	122,000	152,028
1935	1,658	17,769	3,111	14,642	6,285	37,552	40,403	130,497	2,035	4,992	5,976	124,130	163,561
1936	1,946	20,972	3,704	17,529	7,504	50,498	48,539	154,989	2,373	4,896	7,260	118,340	194,603
1937	2,032	22,712	4,158	18,313	7,947	53,270	48,804	176,321	1,941	4,751	6,676	122,723	223,699
1938	2,066	23,133	4,401	19,644	8,562	57,598	59,694	176,718	1,945	6,117	6,792	125,472	250,368
1939	2,129	23,211	4,574	19,549	8,776	53,062	56,520	161,315	1,881	6,542	7,269	137,553	277,517
1940	2,129	22,967	4,575	20,307	9,028	43,786	57,775	152,453	2,073	6,251	8,009	140,849	305,999
1941	2,056	22,734	4,721	21,825	9,017	45,505	48,704	146,847	2,288	6,352	8,162	149,925	320,296
1942	1,938	23,980	5,500	23,952	10,101	34,247	43,367	146,013	2,729	6,991	8,384	135,338	313,625
1943	1,799	25,813	6,478	26,738	11,453	8,926	32,750	138,878	4,106	6,446	9,063	126,274	283,215
1944	1,807	28,101	7,418	29,209	12,512	6,296	29,783	121,600	4,322	6,155	9,671	159,799	279,359
1945	1,931	29,146	7,614	31,741	12,960	10,003	29,090	116,330	4,971	5,676	9,178	161,690	291,585
1946	2,280	30,256	7,884	34,023	13,827	24,150	25,195	117,995	4,573	5,604	10,552	166,791	302,025
1947	2,615	33,806	9,105	38,270	15,748	37,758	43,575	139,842	4,603	5,956	11,802	176,726	338,820
1948	2,788	35,967	10,736	45,626	18,384	44,986	56,450	148,695	3,955	6,974	11,999	195,497	358,221
1949	2,925	38,354	12,928	53,417	21,474	50,378	59,130	142,285	3,553	6,966	13,207	181,466	353,875
1950	3,023	40,733	15,293	63,978	26,044	58,943	60,000	153,813	3,542	6,769	15,250	159,495	368,371
1951	3,111	43,761	19,658	84,431	34,220	67,312	72,075	176,207	3,558	6,797	16,479	217,345	401,556
1952	3,267	45,097	25,385	106,572	42,745	76,884	74,680	199,447	3,680	6,705	17,433	221,846	428,056
1953	3,424	45,188	28,344	119,310	49,191	86,043	97,418	223,325	3,693	6,480	17,784	224,330	469,209
1954	3,523	47,459	31,590	134,587	55,147	101,240	125,466	241,011	3,448	6,142	17,844	187,958	520,301
1955	3,727	49,314	34,738	149,584	60,956	115,412		251,493	3,316	7,145	17,411	165,767	582,688
1956	3,871	50,108	37,206	175,146	69,733	102,359		245,138	3,231	7,404		179,362	626,928
1957	3,935	48,748	36,916	187,636	73,442	101,209		228,427	3,054	7,462		169,535	652,438
1958	3,941	48,462	37,935	196,263	75,312	111,082		233,173	2,952	6,807		148,148	688,990
1959	4,125	48,417	38,732	196,203	78,762	101,521		237,779	2,955	6,166		139,702	731,546
1960	4,279	49,651	41,643	215,582	86,373	110,359	(m)	225,461	3,177	7,376	(m)	150,774	785,147
1961	4,334	50,666	45,128	240,570	96,631	119,998		210,316	3,163	7,661		168,237	870,075
1962	4,418	51,033	46,420	243,494	98,041	119,868		213,948	3,500	7,483		141,103	929,841
1963	4,492	53,435	49,940	258,950	108,211	131,176		205,835	3,837	6,963		135,911	1,019,568

(a) For statistical purposes a factory is defined as any establishment engaged in the processes of manufacturing, assembling, treating or repairing and in which four or more persons are employed during any period of the year, or power other than manual is used. (b) For 1924 and earlier, calendar year; from 1927, year ended 30th June. See also note (l). (c) Average over the full twelve months and includes working proprietors and, up to and including 1925–26, fallers and haulers employed by sawmills. (d) Figures for 1929–30 and later years exclude amounts drawn by working proprietors. (e) Selling value "At Factory Door." (f) Value added in course of manufacture, representing sum available for payment of wages, rent, interest, depreciation, advertising, insurance, etc., and profit. (g) Comprises standard bricks of all types. Prior to 1925–26 firebricks and blocks were included. (h) Includes plywood veneers in terms of super. feet and hewn timber produced by agencies other than "Factories." (i) For 1917 and earlier years, includes butter made on farms (j) Short ton = 2,000 lb. (k) Not available. (l) Eighteen months ended 30th June. (m) Not available for publication.

CONSUMER PRICE INDEX (*a*)

(Base of *each* Index Series : Year 1952–53 = 100)

Year (*b*)	Group Index Numbers—Perth (Metropolitan Area)					Combined Index (All Groups)—Capital Cities						
	Food	Clothing and Drapery	Housing	Household Supplies and Equipment	Miscellaneous	Perth	Sydney	Melbourne	Brisbane	Adelaide	Hobart	Six Capital Cities (*c*)
1949	55·0	59·6	62·7	66·5	67·7	60·6	60·5	61·0	62·1	61·6	60·7	60·9
1950	61·0	68·8	66·4	71·1	69·5	66·2	65·6	66·2	67·1	66·2	64·7	66·0
1951	70·0	78·6	74·5	78·1	75·1	74·4	74·5	74·6	75·1	74·7	73·3	74·6
1952	87·2	95·3	87·2	92·7	90·7	90·4	91·9	91·0	91·8	91·4	90·4	91·4
1953	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0
1954	106·2	100·0	107·8	102·0	99·5	103·0	101·6	102·0	102·0	102·3	105·0	102·0
1955	109·3	100·1	119·2	102·0	99·5	105·2	102·3	102·0	102·9	103·5	104·9	102·6
1956	111·1	101·4	123·8	102·0	105·5	107·9	105·7	108·1	106·3	106·9	110·2	106·9
1957	116·0	103·1	123·6	104·5	117·0	112·9	112·9	114·0	112·0	111·1	116·9	113·1
1958	114·4	105·7	126·0	105·7	118·3	113·6	114·5	114·4	114·4	111·9	117·0	114·2
1959	115·2	107·2	130·3	105·9	118·7	114·7	115·3	116·6	118·2	114·5	118·7	116·0
1960	118·4	108·2	133·5	107·1	120·9	116·9	117·8	120·0	121·2	118·0	120·8	118·9
1961	124·4	110·8	141·7	107·3	125·2	121·2	122·1	125·9	125·4	122·9	127·5	123·8
1962	123·5	111·7	146·4	107·3	125·3	121·6	122·6	126·3	127·3	122·5	128·1	124·3
1963	123·9	112·0	150·9	107·0	125·5	122·2	123·2	126·2	127·7	122·1	128·0	124·5

(*a*) The index numbers shown are so designed as to measure periodically the movement in retail prices of the specified groups of items in each city individually. They do not provide a measure of differences in absolute price level as between cities, nor of comparative costs of the groups of items. (*b*) Year ended June. (*c*) Weighted average.

CIVILIAN EMPLOYMENT

Year (*a*)	Wage and Salary Earners in Civilian Employment (*b*) (Excluding Employees in Rural Industry and Private Domestic Service, and Defence Forces)		
	Males	Females	Persons
	'000	'000	'000
1947			
1948			
1949			
1950	(*f*)	(*f*)	(*f*)
1951			
1952			
1953			
1954	141·2	43·2	184·4
1955	144·5	45·1	189·6
1956	144·7	46·3	191·0
1957	143·3	46·1	189·4
1958	143·1	47·3	190·4
1959 ...	144·9	48·4	193·3
1960	147·5	50·4	197·9
1961	148·5	51·2	199·7
1962	154·7	53·4	208·1
1963	159·4	55·5	214·9

NEW BUILDINGS COMPLETED

Year (*a*)	New Buildings Completed				
	Houses		Flats (*d*)		All Buildings
	Number	Value (*c*)	Number	Value (*c*)	Value (*c*) (*e*)
		£'000		£'000	£'000
1947	1,792	1,758	2	2	2,116
1948	2,771	2,892			3,328
1949	3,244	3,796			4,706
1950	3,509	4,487	101	97	5,352
1951	5,160	7,516	305	303	8,948
1952	6,577	12,233	215	150	14,426
1953	7,965	18,994	100	167	22,918
1954	7,627	19,884	212	417	25,785
1955	8,792	24,211	316	588	34,096
1956	7,760	22,542	584	1,282	33,678
1957	5,030	14,527	365	751	23,424
1958	6,196	15,263	171	356	27,262
1959 ...	5,846	17,205	212	420	30,262
1960	5,997	17,727	263	493	30,120
1961	5,973	19,051	440	790	36,025
1962	6,082	19,735	265	671	34,036
1963	6,593	22,890	642	1,492	43,214

(*a*) Employment estimates relate to the month of June; statistics of New Buildings Completed are for the year ended 30th June. (*b*) New series. Estimates for previous years as published in issues of the *Statistical Summary* for 1961–62 and earlier are not comparable with this series. (*c*) Excludes the value of land. (*d*) Individual dwelling units. (*e*) Includes value of houses and flats shown in preceding columns. (*f*) Not available on basis comparable with that for 1954 and later—*see* note (*b*).

STATE AND COMMONWEALTH BASIC WAGE RATES

At 31st December	State Basic Wage		Commonwealth Basic Wage—Male Rates (a)						
	Perth		Perth	Sydney	Melbourne	Brisbane	Adelaide	Hobart	Weighted Average Six Capital Cities
	Male	Female							
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1923	(b)	(b)	3 18 0	4 9 0	4 11 6	3 16 0	4 5 6	4 9 0	4 7 6
1924	(b)	(b)	3 19 0	4 4 6	4 4 6	3 15 0	4 4 0	4 8 0	4 3 0
1925	(b)	(b)	4 1 0	4 8 0	4 7 6	3 17 0	4 6 0	4 5 6	4 6 0
1926	4 5 0	2 5 11	4 1 6	4 11 6	4 9 0	4 2 6	4 5 6	4 8 6	4 8 6
1927	4 5 0	2 5 11	3 19 6	4 10 6	4 10 0	3 19 6	4 8 0	4 5 0	4 8 0
1928	4 5 0	2 5 11	4 5 0	4 10 6	4 6 0	3 19 0	4 5 0	4 2 6	4 7 0
1929	4 7 0	2 7 0	4 5 6	4 15 0	4 10 0	4 0 6	4 8 6	4 6 0	4 10 6
1930	4 6 0	2 6 5	3 19 0	4 8 0	4 3 0	3 10 6	3 18 0	4 2 0	4 3 0
1931	3 13 6	1 19 8	3 2 1	3 10 8	3 3 5	2 18 6	2 18 1	3 4 4	3 5 3
1932	3 10 6	1 18 1	2 19 5	3 7 6	3 1 8	2 16 8	2 17 2	3 4 4	3 3 0
1933	3 9 3	1 17 5	3 0 3	3 6 11	3 2 10	2 19 4	2 19 7	3 3 11	3 3 4
1934	3 11 0	1 18 4	3 8 0	3 8 0	3 4 0	3 2 0	3 3 0	3 6 0	3 6 0
1935	3 10 6	1 18 1	3 8 0	3 10 0	3 6 0	3 4 0	3 7 0	3 9 0	3 8 0
1936	3 13 9	1 19 10	3 11 0	3 10 0	3 9 0	3 6 0	3 9 0	3 9 0	3 8 0
1937	3 14 11	2 0 5	3 15 0	3 18 0	3 17 0	3 14 0	3 14 0	3 15 0	3 16 0
1938	4 1 1	2 3 9	3 16 0	4 1 0	3 19 0	3 15 0	3 16 0	3 16 0	3 18 0
1939	4 2 2	2 4 4	3 17 0	4 2 0	4 0 0	3 16 0	3 17 0	3 17 0	3 19 0
1940	4 5 4	2 6 1	4 0 0	4 5 0	4 4 0	3 19 0	4 0 0	4 1 0	4 3 0
1941	4 10 5	2 8 10	4 5 0	4 9 0	4 8 0	4 4 0	4 4 0	4 5 0	4 7 0
1942	4 17 9	2 12 9	4 11 0	4 17 0	4 17 0	4 11 0	4 13 0	4 12 0	4 15 0
1943	5 1 1	2 14 7	4 14 0	4 19 0	4 18 0	4 13 0	4 14 0	4 15 0	4 17 0
1944	4 19 11	2 13 11	4 14 0	4 19 0	4 18 0	4 13 0	4 13 0	4 14 0	4 16 0
1945	5 0 1	2 14 1	4 14 0	4 19 0	4 18 0	4 13 0	4 13 0	4 14 0	4 16 0
1946	5 2 1	2 15 1	5 2 0	5 8 0	5 6 0	5 1 0	5 2 0	5 3 0	5 5 0
1947	5 10 9	2 19 10	5 6 0	5 12 0	5 9 0	5 5 0	5 6 0	5 7 0	5 9 0
1948	6 1 7	3 5 8	5 16 0	6 2 0	6 0 0	5 15 0	5 16 0	5 18 0	5 19 0
1949	6 15 11	3 13 5	6 9 0	6 12 0	6 10 0	6 5 0	6 6 0	6 8 0	6 9 0
1950	8 6 6	4 14 1	8 0 0	8 5 0	8 2 0	7 14 0	7 18 0	8 0 0	8 2 0
1951	10 5 8	6 13 8	9 17 0	10 7 0	9 19 0	9 5 0	9 15 0	9 19 0	10 0 0
1952	11 18 6	7 15 0	11 8 0	11 17 0	11 8 0	10 16 0	11 9 0	11 10 0	11 11 0
1953	12 6 6	8 0 3	11 16 0	12 3 0	11 15 0	10 18 0	11 11 0	12 2 0	11 16 0
1954	12 6 6	8 0 3	11 16 0	12 3 0	11 15 0	10 18 0	11 11 0	12 2 0	11 16 0
1955	12 12 5	8 4 1	11 16 0	12 3 0	11 15 0	10 18 0	11 11 0	12 2 0	11 16 0
1956	13 5 2	8 12 4	12 6 0	12 13 0	12 5 0	11 8 0	12 1 0	12 12 0	12 6 0
1957	13 12 9	8 17 3	12 16 0	13 3 0	12 15 0	11 18 0	12 11 0	13 2 0	12 16 0
1958	13 13 5	8 17 9	13 1 0	13 8 0	13 0 0	12 3 0	12 16 0	13 7 0	13 1 0
1959	14 1 6	9 3 0	13 16 0	14 3 0	13 15 0	12 18 0	13 11 0	14 2 0	13 16 0
1960	14 14 7	11 0 11	13 16 0	14 3 0	13 15 0	12 18 0	13 11 0	14 2 0	13 16 0
1961	14 18 9	11 4 1	14 8 0	14 15 0	14 7 0	13 10 0	14 3 0	14 14 0	14 8 0
1962	14 18 9	11 4 1	14 8 0	14 15 0	14 7 0	13 10 0	14 3 0	14 14 0	14 8 0
1963	15 1 6	11 6 1	14 8 0	14 15 0	14 7 0	13 10 0	14 3 0	14 14 0	14 8 0

(a) From December, 1950 the female basic wage has been fixed at 75 per cent. of the male rate; previously it had ranged from 54 per cent. up to 75 per cent. of the male rate. (b) The first State basic wage operated from 1st July, 1926.

APPENDIX

CHAPTER I – HISTORICAL REVIEW

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Summary of Events of 1963

Demography—Estimated increase of population, 18,392, lower than in previous year. Further decline in crude birth rate, to 22·36 per thousand of mean population, the lowest recorded since 1945. Significant reduction in infant mortality; rate for year 20·42 per thousand live births compared with 22·27 in 1962.

Public Finance—State deficit for year ended 30th June, £0·75 million (expenditure £79·3 million, revenue £78·6 million). Budget for 1963–64 presented 26th September; estimated deficit £0·71 million (expenditure £83·8 million, revenue £83·1 million). Federal budget, presented 13th August, provided for increased social service and repatriation benefits. Increase of 10s. per week in pension payable to " single " age and invalid pensioners (including those where the spouse does not receive a pension or allowance); 12s. 6d. in allowance payable to the wife of an invalid pensioner or permanently incapacitated age pensioner, and 5s. on account of each child of such pensioners other than the first; 5s. in pension for widows with one or more dependent children, and introduction of mother's allowance of £2 and payment of 15s. on account of eldest or only dependent child; 10s. for widows without dependent children; 10s. in pension payable to totally and permanently incapacitated war pensioners; 7s. 6d. in domestic allowance for war widows; 10s. in pension payable to single service pensioners, 5s. for each of the second and subsequent children of permanently unemployable pensioners, and 12s. 6d. in rate payable to the wife of a service pensioner. Western Australia (Northern Development) Agreement Act passed by Commonwealth Parliament to provide further financial assistance up to a total of £3·5 million, partly by grant and partly by interest-bearing loan, for development of the part of the State north of 20°S. latitude; moneys to be applied, during the period up to 30th June, 1966, primarily to provision of a new deep-water jetty at Broome and to extension of irrigation works within first stage of Ord River irrigation project. As provided by Motor Vehicle (Third Party Insurance Surcharge) Act, 1962 (State), surcharge imposed from 1st January at rate of £1 per year on premiums paid in respect of policies of insurance with The Motor Vehicle Insurance Trust. Stamp Act Amendment Act (No. 2), 1962 (State) operative 1st January, abolishing duty previously payable on receipts for amounts of £1 or more but less than £5, increasing to 3d. the duty payable on receipts for amounts of £5 or more but less than £50, and imposing higher rates of duty on transfers on sale of property and on hire purchase agreements. Announcement 7th April by Federal Treasurer of Government's intention to proceed with plans for introduction of decimal currency system; first of enabling Acts, the Currency Act, passed by Commonwealth Parliament in October to provide for adoption of currency unit, to be known as the " dollar ", equivalent in value to present ten shillings.

Private Finance—Personal income for year ended 30th June, £385·8 million (wages, salaries and supplements £244·3 million; cash benefits from public authorities £35·8 million; farm income £33·4 million; income from dwelling rent £13·9 million; all other income £58·4 million) or £505 per head of mean population. Depositors' balances held by savings banks exceeded £100 million for the first time; amount on deposit at 31st December, £113·2 million, 16 per cent. higher than at end of 1962. From 1st April, maximum rate of interest on overdrafts with trading banks reduced from 7 per cent. to 6½ per cent. per annum, and rates on fixed deposits from 3¾ per cent. to 3¼ per cent. on those for three months but less than 12 months, and from 4 per cent. to 3½ per cent. on those for 12 months to 15 months. From 1st May, interest rate reduced from 3½ per cent. to 3 per cent. per annum on deposits with savings banks other than the Rural and Industries Bank of Western Australia which reduced its rate from 3¾ per cent. to 3¼ per cent. Value of retail sales of goods £274·4 million, an increase of £15·3 million over previous year. Balances outstanding at end of December on hire purchase agreements and other instalment credit for retail sales amounted to £55·9 million, or £4·2 million more than at end of 1962.

External Trade—Value of imports for year ended 30th June £213·2 million and of exports £173·2 million, resulting in adverse trading balance of £40·0 million, the highest since 1954–55. Oversea imports increased by £6·23 million over 1961–62 and interstate imports by £34·3 million. Decline of £21·1 million in value of oversea exports, but increase of £3·51 million in interstate exports. Further reduction in favourable balance on oversea trading, from £98·4 million to £71·0 million, and increase in interstate trade deficit from £80·3 million to £111·0 million. Average f.o.b. values of greasy wool and of wheat exported during year slightly higher than in 1961–62; wool 60·63 pence per lb. and wheat 14s. 2¾d. per bushel, compared with 59·76 pence per lb. and 14s. 1½d. per bushel in previous year. Exports of greasy

wool 131·4 million lb., wheat 50·7 million bushels, frozen crayfish tails 7·69 million lb., and refined petroleum oils and spirits 556·4 million gallons, all lower than the unprecedentedly high levels attained in 1961–62. Among other principal export commodities showing a decrease in volume were wheaten flour 24·0 per cent., oats 18·7 per cent., barley 44·4 per cent., gold bullion 7·9 per cent., and manganese 51·6 per cent. Those which showed increases included apples 68·9 per cent., frozen and chilled meats (including poultry) 11·0 per cent., and iron ore and concentrates (including pyritic cinders) 32·2 per cent.

Transport and Communication—Initial instalment of Commonwealth financial assistance for rail standardization ; amount received during year ended 30th June £2,162,557, of which £1,405,662 represented repayable advances. First movement of bauxite 29th July over newly-constructed railway from Jarrahdale to alumina refinery at Kwinana. For third successive year, operating revenues of Western Australian Government Railways exceeded operating expenses ; excess for year ended 30th June, £1·14 million, considerably lower than in 1961–62 due mainly to smaller returns from haulage of grain, and deficit (including depreciation and interest) £3·43 million compared with £2·41 million for previous year. Publication of proclamations under Railways (Cue-Big Bell and other Railways) Discontinuance Act of 1960 officially closing a further 80 miles of line formerly operated by Western Australian Government Railways ; of total length of 670 miles authorized for closure under the Act, 409 miles officially proclaimed closed at 31st December. Passage by State Parliament of The Midland Railway Company of Western Australia Limited Acquisition Agreement Act, authorizing the State Government to purchase the assets of the Company. From 1st November, increased fares for most journeys on Metropolitan (Perth) Passenger Transport Trust system and Western Australian Government Railways suburban and country services. Commonwealth financial assistance to 30th June under Western Australia Grant (Beef Cattle Roads) Acts £1·2 million ; in May, first consignment of frozen beef carcasses by road from Glenroy to Derby, replacing air-freight system operated since 1949. Registrations of new motor vehicles (including motor cycles) 32,045, the highest ever recorded and 11 per cent. greater than in 1962. Announcement by Fremantle Harbour Trust in November of plan for up-stream extension of inner harbour at Port of Fremantle, at estimated cost of £7 million. First payment by Commonwealth, amounting to £300,000 for year ended 30th June, in terms of Derby Jetty Agreement Act 1962 (Commonwealth), one-half of this sum representing repayable advances. Survey of Point Samson-Depuch Island area by H.M.A.S. *Barcoo* to chart shipping channels suitable for navigation by deep-draught vessels. New secondary airport for Perth, situated at Jandakot about 15 miles south of Perth, officially opened for light aircraft 21st June ; from 30th June, Maylands aerodrome no longer operative. Satellite-tracking station established at Carnarvon by United States Government in connexion with its programme of manned orbital flights. United States Naval Communication Station Agreement Act passed by Commonwealth Parliament in May to approve an agreement between Australian and United States Governments relating to establishment of naval radio communications station at Exmouth (North West Cape) ; work begun in August on site of main transmitter. Radio-telegraph service between Perth and Exmouth brought into operation in October, and radio-telephone services between Kununurra and Wyndham and between Lancelin and Gingin in December. Television viewers' licences at 31st December numbered 104,017, an increase of 12,000 during year.

Rural Industry—Promising opening to the season in agricultural areas with excellent rains in March and April, but heavy falls in the following months and dry conditions towards the end of the growing season had an adverse effect on grain crops. Yields in some areas further reduced by outbreaks of rust and septoria. Wheat harvest 52·3 million bushels, compared with 72·5 million bushels in previous season. Total production of wheat, oats and barley, 74·3 million bushels, little more than three-quarters of that for 1962–63 and the lowest since 1957–58. Wool production, 218 million lb., the highest ever recorded and more than 18 per cent. greater than in 1962–63. Under special government-supervised plan, 182 bales of tobacco leaf from selected growers in Manjimup area offered for sale at Melbourne auction in June ; only 66 bales sold, at low prices. Ginnery installed at Kununurra for processing of first cotton crops produced on farms in Ord River irrigation area. Amendment to Land Act (State) extending to 30th June, 2015 the term of pastoral leases issued under the Act. Last farms allocated to ex-servicemen under War Service Land Settlement Scheme. Appointment of first members of Australian Wool Board constituted under Wool Industry Act 1962 (Commonwealth). From 1st March, collection of levy of ½d. per lb. on honey production to finance promotional and research activities. Phosphate Fertilizers Bounty Act passed by Commonwealth Parliament to provide for payment of bounty in respect of superphosphate and ammonium phosphate production. Passage of Processed Milk Products Bounty Act (Commonwealth) continuing the Act of 1962 and increasing to £500,000 the amount of bounty payable to processors on

products exported during 1963–64, compared with £350,000 in 1962–63, the first year of operation of the Act. Payment of bounty on production of raw cotton extended to 31st December, 1968 by means of Raw Cotton Bounty Act 1963 (Commonwealth), replacing Cotton Bounty Act 1951–1958. Wheat Stabilization Plan continued for a further five years by Wheat Industry Stabilization Act 1963 (Commonwealth), and Wheat Industry Stabilisation Act, 1963 (State) authorizing operation of the Plan in Western Australia.

Fisheries—Further increase in fish production for year ended 30th June ; total take of fish 32·7 million lb., of which crayfish accounted for 21·4 million lb. Production of prawns 1·02 million lb. compared with 239,000 lb. in 1961–62. Economic survey of Western Australian crayfishing industry, conducted jointly by Commonwealth Department of Primary Industry and Western Australian Fisheries Department, commenced 1st October. Total catch of humpback whales only 87, compared with International Whaling Commission quota of 550. At meeting held in London in July, Commission imposed ban for an indefinite period on taking of humpback whales in Southern Hemisphere ; whaling operations at Carnarvon abandoned in August. In April, commencement of aerial spotting as part of two-year survey of sperm whale resources by Commonwealth Scientific and Industrial Research Organization financed by grant from Fisheries Development Trust Account.

Mining—Passage by State Parliament of Iron Ore (Hamersley Range) Agreement Act, ratifying an agreement between State Government and Hamersley Iron Pty. Limited for mining and export of iron ore from deposits in Hamersley Range, for secondary processing of ore as a later development, and ultimately for establishment of an integrated iron and steel industry. Approval by Commonwealth Government of export of iron ore from Mount Goldsworthy area up to the limit of proved reserves amounting to 64 million tons, and of export of iron-ore pellets from Scott River deposits at the rate of half a million tons annually during the period 1965–1975. Agreement signed in June between State Government and private interests for large-scale production and export of salt from Shark Bay area. Announcement of plans for greatly increased production of tin from deposits at Greenbushes and in the Pilbara. Revival of copper mining at Whim Creek in September (operations discontinued in March, 1964). Asbestos production 11,105 tons, the lowest since 1956. Gold mining operations at Bullfinch abandoned in May, and at Gwalia in December.

Secondary Industry—Net value of factory production for year ended 30th June exceeded £100 million for the first time ; value, £108·2 million, more than 10 per cent. greater than for previous year. Average employment in factories, 53,435 persons, the highest ever recorded and almost 5 per cent. more than in 1961–62. Lubricating oil refinery at Kwinana began production in February. Alumina refinery, using bauxite mined near Jarrahdale in Darling Range, brought into production at Kwinana. Production of titanium oxide pigments begun late in year at large chemical factory at Bunbury. Hydrographic survey by m.v. *Gunga Din* in Collier Bay area of West Kimberley in connexion with State Government's investigation into possibility of producing electric power from tidal sources. Value of all new buildings completed, £42·25 million, slightly higher than in 1962.

Water Supplies—Official opening 20th July of diversion dam on Ord River at Kununurra as first stage of Ord River irrigation project. Announcement 13th August by Federal Treasurer, in presenting budget for 1963–64, of additional financial assistance to be extended to State Government for construction of further supply and drainage channels and other works associated with the project. Completion of Logue Brook Dam, capacity 5,230 million gallons, to augment supply of water to Harvey Irrigation District. Wongan Hills connected to Comprehensive Water Supply Scheme in December. Further request made by State Government to Commonwealth for financial assistance in extension of modified Comprehensive Water Supply Scheme ; amount sought £5·25 million, payable over seven-year period and representing half the estimated cost of proposed extensions. First meeting of Australian Water Resources Council held at Canberra 20th March to evaluate a preliminary assessment of quantities of surface and underground water available in Australia.

Health—Revised system of Commonwealth hospital benefits operative from 1st January ; from that date also, benefit extended to qualified patients in approved nursing homes at rate of £1 per day, whether patient insured or not. From 1st November, substantial increases in charges for accommodation in government hospitals. In May, Perth Chest Hospital renamed the Sir Charles Gairdner Hospital in honour of the retiring Governor of Western Australia. Inauguration in May of " aero-dental " service based on Meekatharra and operated by Perth Dental Hospital in association with Royal Flying Doctor Service to provide regular dental treatment in remote areas. Announcement in April of two-year plan by State Government for comprehensive development of mental health services.

Education—Golden Jubilee Year of University of Western Australia declared open at ceremony held on 25th March. Kingswood College, sponsored by the Methodist Church, open to men students of the University from beginning of academic year; official opening 17th November. Work begun on first stage of an Institute of Technology to be established on a 277-acre site in Collier pine plantation at South Perth. Allowances on account of dependent children of certain classes of social service and repatriation pensioners, previously terminable on the child's attaining the age of 16 years, extended to include " student " children. (A student child is a dependent child aged between 16 and 18 years, who is receiving full-time education at a school, college or university, and the allowance continues until the end of the calendar year in which the child attains the age of 18 years.)

Prices, Wages and Employment—Consumer Price Index for Perth 122·7, compared with 121·8 for 1962. Reduction from 1st October in charges for electricity supplied by State Electricity Commission. State basic wage rates increased from 22nd April, the first rise since 30th October, 1961. Commonwealth basic wage rates unchanged during year. Average weekly earnings per employed male unit for year ended 30th June £22·12 compared with £21·51 in 1961–62. Average number of wage and salary earners in civilian employment (excluding employees in rural industry and private domestic service) 215,900, an increase of 7,600 over average for 1962. Average number of persons receiving unemployment benefit during year 2,874 compared with 2,562 in previous year. Commonwealth financial assistance for year ended 30th June included £1,364,000 as Western Australia's share of grant of £17·5 million to the States for stimulation of employment. Court of Arbitration, in a decision of 28th June, adopted new standard of three weeks' annual leave, instead of two weeks as formerly, for workers under State awards; decision applicable from 30th November. Passage by State Parliament in December of Industrial Arbitration Act Amendment Act (No. 2), 1963 abolishing the former Court of Arbitration and establishing The Western Australian Industrial Commission and the Western Australian Industrial Appeal Court. Twenty-eight industrial disputes involving 42,584 workers resulted in a loss of 31,969 working days and an estimated loss in wages of £126,200.

Legislation and Administration—Parliamentary session opened 1st August, ended 6th December. Legislation included the Agricultural Products Act Amendment Act extending to 31st December, 1965 the operation of the Apple Sales Advisory Committee; the Albany Harbour Board Act Amendment Act conferring additional borrowing powers on the Board; the Bee Industry Compensation Act Amendment Act entitling a beekeeper to compensation equal to the full value of diseased bees or other property destroyed, instead of two-thirds of the value as formerly; the Beef Cattle Industry Compensation Act establishing a fund, to be financed from a cattle sales duty and other sources, for the compensation of owners of diseased cattle destroyed under the provisions of the Act; the Beekeepers Act repealing the Bees Act, 1930–1957 and prescribing measures for the eradication of disease among bees, the orderly conduct of the beekeeping industry and the improvement of the products of the industry; the Bunbury Harbour Board Act Amendment Act conferring additional borrowing powers on the Board; the Bush Fires Act increasing from ten to thirteen the number of members of the Bush Fires Board and giving effect to other recommendations of the Royal Commissioner appointed in 1961 to inquire into bush fires; the Constitution Acts Amendment Act (No. 2) providing for the division of the State into fifteen Electoral Provinces each returning two Members of the Legislative Council, instead of ten Provinces each returning three Members, and making the qualifications of electors and Members of the Legislative Council identical with those of electors and Members of the Legislative Assembly; the Convicted Inebriates' Rehabilitation Act establishing an Inebriates Advisory Board of three members, comprising two psychiatrists and a welfare officer, to assist in the clinical treatment and rehabilitation of convicted inebriates; the Electoral Districts Act Amendment Act appointing Electoral Commissioners to make a redivision of the State into fifteen Electoral Provinces for representation in the Legislative Council, instead of ten Provinces as formerly; the Factories and Shops Act repealing the Factories and Shops Act, 1920–1959, and consolidating and amending the law relating to the supervision and regulation of factories, shops and warehouses; the Fire Brigades Act Amendment Act varying the proportions in which the expenditure of the Western Australian Fire Brigades Board during the three-year period ending 30th September, 1967 shall be met by the several statutory contributors, by increasing from 5/9ths to 64 per cent. the contribution of insurance companies, and reducing from 2/9ths to 16 per cent. and 20 per cent. respectively the contributions of the State Government and the local government authorities; the Foreign Judgments (Reciprocal Enforcement) Act repealing relevant sections of the Supreme Court Act, 1935, and enabling the enforcement in Western Australia of judgments given in the United Kingdom and other countries which accord reciprocity of treatment, and facilitating the enforcement in those countries of judgments

given in Western Australia ; the Government Railways Act Amendment Act removing the limit on the amount of damages recoverable from the Western Australian Government Railways Commission in respect of loss of life or injury ; the Industrial Arbitration Act Amendment Act (No. 2) abolishing the former Court of Arbitration and establishing The Western Australian Industrial Commission, consisting of a Chief Industrial Commissioner and three other Commissioners, and the Western Australian Industrial Appeal Court, consisting of three Judges of the Supreme Court, to hear and determine appeals from any decision of the Commission ; the Iron Ore (Hamersley Range) Agreement Act approving an agreement between the State Government and Hamersley Iron Pty. Limited for the mining and export of iron ore from deposits in the Hamersley Range, for the secondary processing of the ore as a later development, and ultimately for the establishment of an integrated iron and steel industry ; the Iron Ore (Mount Goldsworthy) Agreement Act Amendment Act enabling the parties to substitute another port for Depuch Island and, in the event of such a substitution being made, to make consequential amendments with respect to other matters referred to in the Agreement ; the Land Act Amendment Act extending to the year 2015 the term of pastoral leases due to expire in 1982, abolishing the former Board of Appraisers and establishing in its stead a Pastoral Appraisement Board ; the Licensing Act Amendment Act (No. 4) limiting to declared areas of the State the operation of the section naming as an offence the supplying of alcoholic liquor to aboriginal natives ; the Metropolitan Water Supply, Sewerage, and Drainage Act Amendment Act establishing a Metropolitan Water Supply, Sewerage, and Drainage Board, consisting of seven members and having its own borrowing powers, to replace the former Metropolitan Water Supply, Sewerage and Drainage Department as the authority responsible, subject to the Minister, for the general administration of the Act ; The Midland Railway Company of Western Australia Limited Acquisition Agreement Act authorizing the State Government to purchase the assets of the Company ; the Mining Act Amendment Act increasing from 48 acres to 300 acres the maximum area applying generally to a mineral lease, and varying the conditions relating to the amalgamation of leases ; the Motor Vehicle Drivers Instructors Act requiring a person to be licensed as an instructor if so engaged for reward ; the Native Welfare Act repealing earlier legislation and consolidating and amending the law relating to the welfare of aboriginal natives ; the Noxious Weeds Act Amendment Act imposing a special rate in respect of holdings (other than certain exempt holdings) not exceeding, in the case of a pastoral lease, 3d., and, in the case of other land, ½d., in the £ of the unimproved value of the holding ; the Occupational Therapists Act Amendment Act eliminating the requirement that a person shall have attained the age of 21 years before being registered as an occupational therapist, but prohibiting a minor from engaging in private practice ; the Offenders Probation and Parole Act authorizing the release of offenders on probation or parole, and establishing a Parole Board of five members, under the chairmanship of a Judge of the Supreme Court, to succeed the Indeterminate Sentences Board ; the Pig Industry Compensation Act Amendment Act raising the amount of compensation payable in respect of the destruction of a diseased pig to the full market value of the pig instead of, as formerly, three-quarters of the value, and increasing from £24 to £40 the maximum amount payable in respect of any pig destroyed ; the Prisons Act Amendment Act repealing sections relating to the former Indeterminate Sentences Board ; the Public Service Act Amendment Act increasing from two weeks to three weeks, from the 1st January, 1963, the period of annual recreation leave for persons employed under the Act, simplifying certain administrative procedures and amending the provisions relating to the making of regulations ; the Rural and Industries Bank Act Amendment Act deleting the provision limiting the funds of the Bank to the sum of £12 million, and extending the borrowing powers of the Bank ; the Stamp Act Amendment Act (No. 2) imposing, subject to certain exemptions, a duty on a motor vehicle licence or the transfer of a licence at the rate of 10s. for every £100, or part of £100, of the value of the vehicle to which the licence or the transfer relates ; the Stamp Act Amendment Act (No. 4) levying duty as provided for by the Beef Cattle Industry Compensation Act, at the rate of 1d. in the £ on sales of cattle or carcasses up to a maximum of 5s. in respect of any one animal or carcass ; the Taxi-cars (Co-ordination and Control) Act constituting a Taxi Control Board comprising the Commissioner of Transport, or his deputy, as Chairman, and six other members for the co-ordination and control of taxi-cars in the Metropolitan Traffic Area and such other areas as may be declared; the Traffic Act Amendment Act providing that no licence fee shall be payable in respect of a motor vehicle used exclusively for interstate transport, and increasing penalties for the overloading of goods vehicles ; the Traffic Act Amendment Act (No. 2) increasing from 10s. to £2 the fee payable on each application for a licence to drive a motor vehicle ; the Traffic Act Amendment Act (No. 3) providing that where a person has not previously held a driver's licence or has not held a licence elsewhere than in Western Australia for a period of three years or more he shall be issued with a licence on probation

only and shall remain on probation for a period of three years ; the Wheat Industry Stabilisation Act repealing the Wheat Industry Stabilisation Act of 1958 and authorizing the operation in Western Australia of the Wheat Industry Stabilization Act 1963 (Commonwealth) relating to the marketing of wheat harvested during the seasons 1963–64 to 1967–68 ; and the Workers' Compensation Act Amendment Act increasing from £150 to £200 the maximum amount of medical expenses payable in respect of an injured worker, and from £250 to £325 the maximum amount of hospital expenses. Among Bills introduced but not passed were the Drugless Practitioners Bill designed to provide for the registration and control of such practitioners as chiropractors, osteopaths and naturopaths ; the Electoral Act Amendment Bill aiming to provide for the compilation and maintenance of a single roll of electors for the State Parliament and the Commonwealth Parliament ; and the Fluoridation of Public Water Supplies Bill seeking authorization for the addition of fluoride to public water supplies.

Marriage Act 1961 (Commonwealth), providing a uniform marriage law applicable throughout Australia, and Registration of Births, Deaths and Marriages Act, 1961 (State) operative from 1st September.

Death in April of Hon. E. M. Davies, M.L.C. for West Province, in May of Hon. W. R. Hall, M.L.C. for North-East Province, and in June of Hon. C. H. Simpson, M.L.C. for Midland Province. At by-election of 29th June, Hon. J. Dolan elected M.L.C. for West Province and Hon. D. P. Dellar for North-East Province. At by-election of 17th August, Hon. J. Heitman elected M.L.C. for Midland Province.

Departure in June of His Excellency Lieutenant-General Sir Charles Gairdner, K.C.M.G., K.C.V.O., K.B.E., C.B., Governor of Western Australia since 1951. On 25th October, Major-General Sir Douglas Kendrew, K.C.M.G., C.B., C.B.E., D.S.O. sworn in as Governor.

At Federal elections held 30th November, Liberal-Country Party Government returned to office with majority in House of Representatives increased from two seats to 22 seats.

Miscellaneous—Extensive damage at Onslow from cyclone on 7th February ; wind velocity 144 miles per hour, the highest ever recorded in Australia. Earth tremor in January felt over large area in south-west of State. Widespread tremor experienced in November from earthquake centred off north-west coast of Australia.

Official opening 25th March of Council House, new administrative headquarters of Perth City Council.

Official opening 29th March of Karnet Rehabilitation and Training Centre at Keysbrook in Darling Range near Perth ; minimum security accommodation provided for 120 men, comprising convicted inebriates and young offenders convicted of criminal offences.

Contract let in August for erection of administration building for State Government, at cost of more than £2 million, on site formerly occupied by State Government Observatory ; work begun in September.

Gazettal 13th December of Order in Council, effective from 1st January, 1964, constituting new Shire of Exmouth by severance of territory from Shire of Gascoyne-Minilya.

Ceremony at King's Park in March to mark beginning of reticulation of water to area being developed as a Botanic Garden of native flora ; planting begun in May. Announcement in October of plan, to cost £47,000 during a period of three years, for further improvement of King's Park.

Visit in March of Her Majesty Queen Elizabeth II and His Royal Highness the Duke of Edinburgh.

CHAPTER III – CONSTITUTION AND GOVERNMENT

pages 97, 102

The Federal Parliament

Elections for the House of Representatives were held on the 30th November, 1963. The Liberal-Country Party Government, led by the Right Honourable Sir Robert Menzies, K.T., C.H., Q.C., M.P., was returned to office with a majority of 22 seats, instead of two seats as in the previous Parliament.

In Western Australia, Mr. J. M. Hallett (Country Party) replaced Mr. N. McNeill (Liberal Party) as Member for the Electorate of Canning, and Mr. D. W. Maisey (Country Party) succeeded Mr. H. A. Leslie (Country Party) in the Electorate of Moore. In the other seven electorates representation remained as shown on page 97.

On the 17th December, 1963 the Prime Minister announced the names of members of an enlarged and reconstituted Ministry. They included three Western Australian Members of the House of Representatives and one Senator from Western Australia. The Honourable P. M. C. Hasluck, formerly Minister for Territories, would become Minister for Defence. The Honourable Gordon Freeth, previously Minister for the Interior, Minister for Works, and Minister assisting the Attorney-General, would assume the office of Minister for Shipping and Transport. Mr. (now the Honourable) F. C. Chaney, A.F.C. would become Minister for the Navy. Senator the Honourable S. D. Paltridge would retain the portfolio of Minister for Civil Aviation.

On the 24th April, 1964, the Honourable P. M. C. Hasluck was appointed Minister for External Affairs and Senator the Honourable S. D. Paltridge became Minister for Defence and Minister for Civil Aviation.

pages 99–100

The Legislative Council

The Constitution Acts Amendment Act (No. 2), 1963, which came into operation on the 26th March, 1964, provides for the division of the State into fifteen Electoral Provinces each returning two Members of the Legislative Council, instead of ten Provinces each returning three Members as at present. The term of office of a Member will continue to be six years. The effect of the amendment is, therefore, that one-half of the Members will retire every three years.

The term of the ten Members due to retire in 1964 is extended to 1965. Of the ten Members due to retire in 1966, five will retire in 1965, and the term of the remaining five is extended to 1968. The fifteen Members to be elected in 1965 will hold office until 1971, and the fifteen to be elected in 1968, until 1974.

The Act provides further for amendments to the qualifications necessary for election as a Member of the Legislative Council. The minimum requirement relating to length of residence in Western Australia is reduced from two years to one year, and the minimum age, from 30 years to 21 years. The qualifications for election as a Member of the Legislative Council thus become identical with those necessary for election as a Member of the Legislative Assembly. By another provision of the Act, " the qualification of electors of members of the Legislative Council is that which is prescribed . . . as the qualification for electors of members of the Legislative Assembly ". The possession of certain property qualifications is thus no longer required for enrolment as an elector of the Legislative Council.

The Electoral Districts Act Amendment Act, 1963, which came into force on the 28th February, 1964, provides for the appointment of Electoral Commissioners to make a redivision of the State into fifteen Electoral Provinces, instead of ten Provinces as formerly. The Act requires that the division be made on the basis of a Metropolitan Area, an Agricultural, Mining and Pastoral Area, and a North-West Area.

It is provided that each Electoral Province shall consist of complete and contiguous Electoral Districts as delineated for the purpose of representation in the Legislative Assembly. The fifty Electoral Districts in the State are to be allocated among the several Areas, and Provinces within each Area, in the following way. The Metropolitan Area shall comprise five Provinces each containing at least four and not more than five Districts ; the Agricultural, Mining and Pastoral Area, eight Provinces each containing three Districts ; and the North-West Area, two Provinces each containing two Districts.

The Electoral Districts Act, 1947–1963 provides that the Electoral Commissioners shall be the Chief Justice of Western Australia as Chairman, the Surveyor-General, and the Chief Electoral Officer. The Commissioners were appointed in terms of a Commission issued on the 5th March, 1964. The Chief Justice made a public announcement on the 20th March and published a map containing the Commissioners' tentative proposals for the redivision, at the same time inviting objections to the proposals or suggestions to vary them. After considering the objections and suggestions submitted, the Commissioners made their final report on the 20th May. This report, together with maps showing the tentative proposals and the final determinations of the Commissioners, was published in an issue of the *Government Gazette of Western Australia* dated the 29th May, 1964. The following list gives the names of the Electoral Provinces as finally determined, and the Electoral Districts contained within each Province.

ELECTORAL PROVINCES AND ELECTORAL DISTRICTS—1964

Electoral Province	Component Electoral Districts	Electoral Province	Component Electoral Districts
METROPOLITAN AREA			
Metropolitan	Claremont Cottesloe Nedlands Perth Subiaco	South Metropolitan	Cockburn East Melville Fremantle Melville
North Metropolitan	Balcatta Karrinyup Mount Hawthorn Wembley	South-East Metropolitan	Beeloo Canning South Perth Victoria Park
North-East Metropolitan	Bayswater Belmont Maylands Mount Lawley Swan		
AGRICULTURAL, MINING AND PASTORAL AREA			
Central	Avon Mount Marshall Northam	South-East	Boulder-Eyre Kalgoorlie Merredin-Yilgarn
Lower Central	Collie Katanning Narrogin	South-West	Blackwood Vasse Warren
Lower West	Bunbury Murray Wellington	Upper West	Geraldton Greenough Moore
South	Albany Roe Stirling	West	Dale Darling Range Toodyay
NORTH-WEST AREA			
Lower North	Gascoyne Murchison	North	Kimberley Pilbara

Members of the Legislative Council—Hon. E. M. Davies (Australian Labor Party) West Province died on the 10th April, 1963, and Hon. W. R. Hall (Australian Labor Party) North-East Province, on the 1st May, 1963. At a by-election held on the 29th June, 1963, Mr. (now Hon.) John Dolan (Australian Labor Party) was elected Member for the West Province, and Mr. (now Hon.) D. P. Dellar (Australian Labor Party) for the North-East Province.

Hon. C. H. Simpson (Country Party) Midland Province died on the 12th June, 1963. At a by-election held on the 17th August, 1963, Mr. (now Hon.) Jack Heitman (Liberal and Country League) was elected Member for the Midland Province.

As a result of these by-elections, Australian Labor Party representation in the Legislative Council remained unaltered at 13, Country Party representation was reduced from 8 to 7, and Liberal and Country League representation was increased from 9 to 10.

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The Court of Arbitration

See reference on page 438 under the heading *Industrial Arbitration.*

CHAPTER V – SOCIAL CONDITION

PART 5—SOCIAL BENEFITS, RELIEF PAYMENTS AND CHILD WELFARE

pages 175–84

Commonwealth Benefits

The following tables and letterpress relate to the more important variations in social service, repatriation and health benefits which have taken place during 1963 and 1964.

RATES OF BENEFIT—INCREASES DURING 1963

Benefit	Rate per week at 1st January, 1963	Increase during 1963		Rate per week at 31st December, 1963
		Amount per week	Date of Operation	
	£ s. d.	£ s. d.		£ s. d.
Pensions—				
Age—Single person (*a*)	5 5 0	10 0	14th November	5 15 0
Invalid—				
Single person (*a*)	5 5 0	10 0	,,	5 15 0
Wife (*b*)	2 7 6	12 6	3rd October	3 0 0
Each child, other than the first, under 16 years of age (*b*)	10 0	5 0	,,	15 0
Widows'—				
Widow with one or more dependent children—	5 10 0	5 0	24th September	5 15 0
Mother's Allowance	*nil*	2 0 0	,,	2 0 0
First child under 16 years of age	*nil*	15 0	,,	15 0
Widow aged 50 years or over	4 12 6	10 0	,,	5 2 6
Widow aged under 50 years in necessitous circumstances	4 12 6	10 0	,,	5 2 6
War—				
Incapacitated ex-serviceman—Special Rate (*c*)	13 5 0	10 0	26th September	13 15 0
Widow—Domestic Allowance	3 2 6	7 6	,,	3 10 0
Service—				
Ex-serviceman	5 5 0	10 0	7th November	5 15 0
Wife	2 7 6	12 6	26th September	3 0 0
Each child, other than the first, under 16 years of age (*d*)	10 0	5 0	,,	15 0
Tuberculosis Allowance—				
Each child, other than the first, under 16 years of age	10 0	5 0	3rd October	15 0
Sufferer without dependants, maintained free of charge in an institution	5 5 0	10 0	14th November	5 15 0

(*a*) Includes pensioners where the spouse does not receive pension or allowance. (*b*) The wife's allowance and the child's allowance are payable also in the case of an age pensioner who is permanently incapacitated. (*c*) Payable to the totally and permanently incapacitated. (*d*) Payable to pensioners who are permanently unemployable.

Dependent Children—Allowances on account of dependent children, which previously ceased when the child attained the age of 16 years, were extended to include " student " children of an invalid pensioner, an age pensioner permanently incapacitated for work, a widow pensioner, a service pensioner, or a recipient of a tuberculosis allowance A student child is a dependent child aged between 16 years and 18 years, who is receiving full-time education at a school, college or university. The allowance payable on account of a student child continues until the end of the calendar year in which the child attains the age of 18 years.

RATES OF BENEFIT—INCREASES DURING 1964

Benefit	Rate per week at 31st December, 1963	Increase during 1964 (*a*)	Total (*a*)
	£ s. d.	s. d.	£ s. d.
Pensions—			
Age—			
Single person (*b*)	5 15 0	5 0	6 0 0
Married	5 5 0	5 0	5 10 0
Invalid—			
Single person (*b*)	5 15 0	5 0	6 0 0
Married	5 5 0	5 0	5 10 0
Widows'—			
Widow with one or more dependent children	5 15 0	5 0	6 0 0
Widow aged 50 years or over	5 2 6	5 0	5 7 6
Widow aged under 50 years in necessitous circumstances	5 2 6	5 0	5 7 6
War—			
Incapacitated ex-serviceman—			
Special Rate (*c*)	13 15 0	10 0	14 5 0
Full General Rate (*d*)	5 15 0	5 0	6 0 0
Wife	1 15 6	5 0	2 0 6
Widow	5 15 0	5 0	6 0 0
Service—			
Ex-serviceman—			
Single	5 15 0	5 0	6 0 0
Married	5 5 0	5 0	5 10 0
Child Endowment (*e*)—			
Each child after the second, under 16 years of age	10 0	5 0	15 0
Student child aged over 16 years but under 21 years	*nil*	15 0	15 0
Tuberculosis Allowance—			
Sufferer without dependants—			
Undergoing approved treatment at home	7 7 6	5 0	7 12 6
Maintained free of charge in an institution	5 15 0	5 0	6 0 0
Married sufferer with dependent wife	12 2 6	10 0	12 12 6

(*a*) Payable from the first pension pay-day after the passage of the necessary legislation, except in the case of Child Endowment which was increased from 14th January, 1964. (*b*) See note (*a*) to previous table. (*c*) See note (*c*) to previous table. (*d*) See note (*d*) to previous table. (*e*) Payable from 14th January, 1964.

Medical Benefits—From the 1st June, 1964 the Commonwealth benefit payable in respect of each general practitioner consultation or visit was increased from 6s. to 8s.

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State Relief Payments

From the 16th October, 1963, State monetary assistance to deserted wives, women with husbands in prison and widows, not in receipt of a Commonwealth widow's pension, was increased from £4 2s. 6d. to £5 2s. 6d. per week and the payment for the first dependent child, from £1 10s. to £2 per week.

Prior to the 16th October, 1963, a widow receiving a Commonwealth pension might qualify for State monetary assistance at the rate of 12s. 6d. per week for the first dependent child and 15s. per week for each of the second and subsequent children. From that date, assistance for the first two children was discontinued and an allowance at a uniform rate of £1 10s. per week became payable in cases where there were three or more dependent children. The effect of these changes is summarized in the following table.

Category	Weekly Rate of Payment					
	Prior to 16th October, 1963			From 16th October, 1963		
	Commonwealth Benefits	State Monetary Assistance	Total	Commonwealth Benefits	State Monetary Assistance	Total
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Widow with one dependent child	5 10 0	12 6	6 2 6	8 10 0		8 10 0
Widow with two dependent children	6 5 0	1 7 6	7 12 6	9 5 0		9 5 0
Widow with three dependent children	7 0 0	2 2 6	9 2 6	10 0 0	1 10 0	11 10 0
Additional payment for each child after the third	15 0	15 0	1 10 0	15 0		15 0

The payments made by the State to an age or invalid pensioner on account of dependent children were varied from the 16th October, 1963. Previously assistance was at the rate of £1 per week for the first child, 5s. per week for the second child and 15s. per week for each additional child. The payment for each child after the second was discontinued and replaced by a fixed amount of £1 15s. per week where there were three or more dependent children. From the same date, the amount payable to the wife of an age pensioner, not eligible for a wife's allowance from the Commonwealth and having dependent children, was increased from £3 2s. 6d. to £3 15s. per week.

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Child Welfare

Maintenance of Children—Prior to the 1st October, 1963, payment by the Child Welfare Department to foster-parents having State wards in their care was at the rate of £2 5s. per week for each child. The rate was increased, from that date, to £2 16s. for the first child, £2 12s. for the second child and £2 10s. for each additional child. The subsidy for wards in institutions was increased to £2 6s. per week from the 1st July, 1963 and to £2 11s. from the 1st July, 1964.

PART 6—LAW COURTS, POLICE AND PRISONS

pages 189, 190

Industrial Arbitration

The Industrial Arbitration Act Amendment Act (No 2), 1963, which came into operation on the 1st February, 1964, abolishes the former Court of Arbitration and establishes The Western Australian Industrial Commission and the Western Australian Industrial Appeal Court.

The Western Australian Industrial Commission consists of a Chief Industrial Commissioner and three other Commissioners. The Act provides that a Commissioner sitting or acting alone constitutes the Commission and may exercise all the powers and jurisdiction of the Commission.

The Commission is empowered to inquire into any industrial matter or industrial dispute in any industry and to make orders or awards fixing the prices for work done by, and the rates of wages payable to workers ; fixing the number of hours and the times to be worked in order to entitle those workers to the wages so fixed ; limiting the hours of piece workers ; fixing the rates for overtime, work on holidays, shift work, week-end work and other special work, including allowances as compensation for overtime ; determining any industrial matter ; and declaring what deduction may be made from the prices or wages of workers for board or residence or board and residence provided for workers and for any customary provisions or payments in kind conceded to such workers.

The Commission in Court Session is constituted by not less than three Commissioners sitting or acting together. Appeals from decisions of a single Commissioner are heard and determined by the Commission in Court Session. Such appeals are restricted to the evidence and matters raised in the proceedings before the single Commissioner.

The Act requires that basic wage determinations shall be made by the Commission in Court Session.

The Western Australian Industrial Appeal Court consists of three Judges, one of whom is President of the Court. The President and the other members are nominated by the Chief Justice of Western Australia. Certain of the functions, powers and jurisdiction conferred on the Court may be exercised by any member, on the nomination of the President, sitting or acting alone. An appeal lies to the Court from any decision of the Commission or the Commission in Court Session, but only on the ground that such decision is erroneous in law or is in excess of jurisdiction.

CHAPTER VII—LAND TENURE AND SETTLEMENT, WATER CONSERVATION AND SUPPLY

PART 1—LAND TENURE AND SETTLEMENT

page 225

Pastoral Leases

By a provision of the Land Act Amendment Act, 1963, which came into operation on the 10th January, 1964, the term of pastoral leases issued under the Land Act is extended to the 30th June, 2015.

PART 2—WATER CONSERVATION AND SUPPLY

pages 234, 237

Metropolitan Water Supply

An amendment made in 1963 to the Metropolitan Water Supply, Sewerage, and Drainage Act became operative on the 1st July, 1964. It established a Metropolitan Water Supply, Sewerage, and Drainage Board to replace the former Metropolitan Water Supply, Sewerage and Drainage Department as the authority responsible, subject to the Minister, for the general administration of the Act.

The Board consists of seven members appointed by the Governor. One member is appointed Chairman on the nomination of the Governor and the remaining members comprise the General Manager of the Board; a qualified engineer; the Under-Treasurer or an officer of the Treasury nominated by him; and three representatives of ratepayers of municipal districts within the Metropolitan Water, Sewerage, and Drainage Area constituted under the Act.

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Comprehensive Water Supply Scheme

It was announced by the Federal Treasurer on the 11th August, 1964, when presenting the budget for 1964-65, that the Commonwealth was prepared to give financial assistance to the State Government in extending the Comprehensive Water Supply Scheme to an additional area of about 3·7 million acres. The assistance would take the form of an interest-bearing loan up to a maximum of £5,250,000 over a period of seven years, subject to matching contributions by the State Government. The first advances would be made in the financial year 1965–66.

CHAPTER VIII—PRODUCTION

PART 1—PRIMARY PRODUCTION

page 287

Whaling

During the 1963 season the two whaling companies operating in Western Australia took only 87 humpback whales, compared with a quota of 550 allocated under the procedure laid down by the International Whaling Commission. At a meeting held in London in July, 1963 the Commission decided that more stringent measures should be adopted to prevent further depletion of numbers. Accordingly it imposed a total ban on the taking of humpback whales for an indefinite period in all waters of the Southern Hemisphere. The company operating from Carnarvon, which relied mainly on the taking of humpbacks, ceased whaling operations at its Carnarvon base early in August, 1963.

CHAPTER IX—TRADE, TRANSPORT AND COMMUNICATION

PART 2—TRANSPORT

page 350

Railways

The Midland Railway Company of Western Australia Limited Acquisition Agreement Act, 1963 was assented to on the 9th December, 1963 and came into operation on the 13th December, 1963. The Act authorized the State Government to purchase the assets of the Company. The railway system and the road service formerly operated by the Company were officially transferred to the Western Australian Government Railways on the 1st August, 1964.

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Finance for Roads

The Commonwealth Aid Roads Act 1964, which was assented to on the 26th May, 1964, became operative on the 23rd June, 1964. It supersedes the Commonwealth Aid Roads Act of 1959 and authorizes the Commonwealth to grant financial assistance to the States in relation to roads during the period of five years commencing on the 1st July, 1964. This assistance takes the form of a basic grant aggregating £330 million for the five-year period, with an additional grant of £45 million. The basic grant increases uniformly each year from £62 million in 1964–65 to £70 million in 1968–69. After payment to Tasmania of five per cent. of the basic grant for each year, the balance is to be allocated among the States in the proportion of one-third according to population, one-third according to area and one-third according to the number of motor vehicles registered. The additional grant, which increases uniformly from £3 million in the first year to £15 million in the fifth year, is a conditional one dependent on a State's expenditure on roads from its own resources. Where this expenditure in any year exceeds a specified amount (£2,686,917 in the case of Western Australia), the State is entitled to receive a grant equal to the amount of the excess or its quota of the additional grant for that year, whichever is the less. A State's quota of the additional grant is determined on the same principle as that used in allocating the basic grant.

The Commonwealth Aid Roads Act 1964 continues the requirement of earlier legislation that not less than two-fifths of the moneys paid to a State in respect of any year shall be spent on the construction of rural roads or the purchase of road-making plant for use in connexion with rural roads, which it defines as " roads in rural areas . . . other than highways, trunk roads and main roads ".

CHAPTER X—EMPLOYMENT, WAGES AND PRICES

PART 2—WAGES

page 385

The Basic Wage

See also reference on page 438 under the heading *Industrial Arbitration.*

The Western Australian Industrial Commission made its first adjustment to the basic wage on the 27th April, 1964, when it prescribed increased rates to apply on and from that date. As a result of this decision, the weekly rates payable to adult males were £15 4s. 2d. in the Metropolitan Area, £15 2s. 7d. in the South-West Land Division, and £14 16s. 8d. in Goldfields Areas and other parts of the State.

On the 15th June, 1964 the Trades and Labor Council of Western Australia, acting on behalf of registered unions, addressed to the Commission a request for an inquiry into the basic wage. A preliminary hearing was held on the 3rd July to consider questions of procedure, representation and related matters. The general inquiry began before the Commission in Court Session on the 22nd July and was completed on the 14th August. Representatives of the unions and of the Western Australian Employers' Federation (Incorporated) made extensive submissions and the Crown Counsel, on behalf of the State Government, intervened in the public interest, as authorized under section 68 of the Industrial Arbitration Act, 1912–1963. Judgment was given on the 22nd September. The Commission was unanimous in its conclusion that one basic wage should apply to the whole State, but was divided as to the amount of the wage. The majority view was that a weekly rate of £15 8s. should be declared as appropriate to adult male workers, and an order was issued accordingly prescribing this amount for males and an amount of £11 11s. for females, the rates to apply uniformly throughout the State and to operate on and from the 22nd September, 1964.

NOTE ON STATISTICAL DIVISIONS

Western Australia is divided into a number of municipal districts for the purposes of local government administration. At the 31st December, 1962 there were 145 such districts, which are used as the basis of presentation of data derived not only from the population census but also from many of the regular statistical collections. Information presented in this way is valuable when considering activities in particular local government areas but is often more detailed than is required for a broader geographical assessment. For this reason, the municipal districts are combined into eleven Statistical Divisions which provide significant areas for the publication of statistics in a convenient and readily appreciable summary form.

The partition of the Australian States into Statistical Divisions originated from a resolution of a conference of 1928 between the Federal Health Council of Australia and the Statisticians of the Commonwealth and the States concerning the need for the delineation of areas appropriate for the purposes of statistical tabulation. They first became operative in 1929 after consultation between the Commonwealth Statistician, the Statisticians of the States in collaboration with the State health authorities, and the Commonwealth Department of Health. Although Statistical Divisions were devised initially for use in the compilation and presentation of vital statistics, the advantages of extending the system to other fields of statistical investigation were recognized at once and it soon came to have general application in cases where consideration of areas was relevant.

The Statistical Divisions of Western Australia and their component local government districts as at the 31st December, 1962 are listed on the following pages and are shown on the accompanying map of the State. The population of each Division as recorded at each of the three most recent Population Censuses is shown in the following table, together with estimates as at the 30th June, 1963. The areas of the Divisions at that date are also given.

STATISTICAL DIVISIONS—POPULATION (†) AND AREA

Statistical Division	Population at Census of 30th June—			Estimated Population at 30th June, 1963	Area at 30th June, 1963
	1947	1954	1961		
	persons	persons	persons	persons	square miles
Metropolitan	272,528	348,647	420,133	445,000	192
Swan	30,440	46,402	55,265	59,530	1,881
South-West	51,973	68,553	71,637	73,240	11,025
Southern Agricultural	24,948	36,125	41,623	43,430	22,029
Central Agricultural	43,790	55,924	57,594	58,310	30,287
Northern Agricultural	24,665	32,068	35,785	37,250	36,844
Eastern Goldfields	37,722	34,578	34,142	33,770	249,035
Central	6,370	4,794	3,959	4,000	215,070
North-West	2,638	4,220	4,563	4,870	75,732
Pilbara	1,651	2,650	3,243	3,470	171,462
Kimberley	2,774	3,543	5,668	6,360	162,363
WHOLE STATE	(a) 502,480	(a) 639,771	(a) 736,629	(a)(b) 772,511	975,920

(†) Excluding full-blood aboriginals. (a) Includes "migratory" population. Migratory population comprises persons (both passengers and crew) not enumerated elsewhere who, at midnight on Census night, were on board ships or were travelling on long-distance trains or aircraft. (b) Represents population at the Census of 30th June, 1961 plus natural increase and recorded net migration since that date; subject to revision after the next Census.

LIST OF STATISTICAL DIVISIONS

with component Local Government Districts at 31st December, 1962

METROPOLITAN

Cities

FREMANTLE
NEDLANDS
PERTH
SOUTH PERTH
SUBIACO

Towns

CLAREMONT
COTTESLOE
EAST FREMANTLE
MELVILLE
MIDLAND
MOSMAN PARK

Shires

Bassendean
Bayswater
Belmont
Canning
Peppermint Grove
Perth
Swan-Guildford (Guildford Ward and South Ward)

SWAN

Shires

Armadale-Kelmscott
Cockburn
Gosnells
Kalamunda
Kwinana
Mundaring
Rockingham
Serpentine-Jarrahdale
Swan-Guildford (except Guildford Ward and South Ward)
Wanneroo

SOUTH-WEST

Town

BUNBURY

Shires

Augusta-Margaret River
Balingup
Boddington
Bridgetown
Busselton
Capel
Collie
Dardanup
Donnybrook
Greenbushes
Harvey
Mandurah
Manjimup
Murray
Nannup
Upper Blackwood
Waroona

SOUTHERN AGRICULTURAL

Town

ALBANY

Shires

Albany
Broomehill
Cranbrook
Denmark
Dumbleyung
Gnowangerup
Katanning
Kojonup
Lake Grace
Nyabing-Pingrup
Plantagenet
Tambellup
Wagin
West Arthur
Woodanilling

CENTRAL AGRICULTURAL

Towns

NARROGIN
NORTHAM
YORK

Shires

Beverley
Brookton
Bruce Rock
Corrigin
Cuballing
Cunderdin
Dowerin
Goomalling
Kellerberrin
Kondinin
Koorda
Kulin
Merredin
Mount Marshall
Mukinbudin
Narembeen
Narrogin
Northam
Nungariu
Pingelly
Quairading
Tammin
Toodyay
Trayning-Kununoppin-Yelbeni
Wandering
Westonia
Wickepin
Williams
Wyalkatchem
York

NORTHERN AGRICULTURAL

Town

GERALDTON

Shires

Carnamah
Chapman Valley
Chittering
Coorow
Dalwallinu
Dandaragan
Geraldton-Greenough
Gingin
Irwin
Mingenew
Moora
Morawa
Mullewa
Northampton
Perenjori
Three Springs
Victoria Plains
Wongan-Ballidu

EASTERN GOLDFIELDS

Towns

BOULDER
KALGOORLIE

Shires

Coolgardie
Dundas
Esperance
Kalgoorlie
Laverton
Leonora
Menzies
Ravensthorpe
Yilgarn

CENTRAL

Shires

Cue
Meekatharra
Mount Magnet
Murchison
Sandstone
Wiluna
Yalgoo

NORTH-WEST

Town

CARNARVON

Shires

Ashburton
Gascoyne-Minilya
Shark Bay
Upper Gascoyne

PILBARA

Shires

Marble Bar
Nullagine
Port Hedland
Roebourne
Tableland

KIMBERLEY

Shires

Broome
Halls Creek
West Kimberley
Wyndham-East Kimberley

LIST OF LOCAL GOVERNMENT DISTRICTS

at 31st December, 1962

Local Government District	City (C) Town (T) Shire (S)	Statistical Division in which Situated
ALBANY	T.	Southern Agricultural
Albany	S.	Southern Agricultural
Armadale-Kelmscott	S.	Swan
Ashburton	S.	North-West
Augusta-Margaret River	S.	South-West
Balingup	S.	South-West
Bassendean	S.	Metropolitan
Bayswater	S.	Metropolitan
Belmont	S.	Metropolitan
Beverley	S.	Central Agricultural
Boddington	S.	South-West
BOULDER	T.	Eastern Goldfields
Bridgetown	S.	South-West
Brookton	S.	Central Agricultural
Broome	S.	Kimberley
Broomehill	S.	Southern Agricultural
Bruce Rock	S.	Central Agricultural
BUNBURY	T.	South-West
Busselton	S.	South-West
Canning	S.	Metropolitan
Capel	S.	South-West
Carnamah	S.	Northern Agricultural
CARNARVON	T.	North-West
Chapman Valley	S.	Northern Agricutural
Chittering	S.	Northern Agricultural
CLAREMONT	T.	Metropolitan
Cockburn	S.	Swan
Collie	S.	South-West
Coolgardie	S.	Eastern Goldfields
Coorow	S.	Northern Agricultural
Corrigin	S.	Central Agricultural
COTTESLOE	T.	Metropolitan
Cranbrook	S.	Southern Agricultural
Cuballing	S.	Central Agricultural
Cue	S.	Central
Cunderdin	S.	Central Agricultural
Dalwallinu	S.	Northern Agricultural
Dandaragan	S.	Northern Agricultural
Dardanup	S.	South-West
Denmark	S.	Southern Agricultural
Donnybrook	S.	South-West
Dowerin	S.	Central Agricultural
Dumbleyung	S.	Southern Agricultural
Dundas	S.	Eastern Goldfields
EAST FREMANTLE	T.	Metropolitan
Esperance	S.	Eastern Goldfields
FREMANTLE	C.	Metropolitan
Gascoyne-Minilya	S.	North-West
GERALDTON	T.	Northern Agricultural
Geraldton-Greenough	S.	Northern Agricultural
Gingin	S.	Northern Agricultural
Gnowangerup	S.	Southern Agricultural
Goomalling	S.	Central Agricultural
Gosnells	S.	Swan
Greenbushes	S.	South-West
Halls Creek	S.	Kimberley
Harvey	S.	South-West
Irwin	S.	Northern Agricultural
Kalamunda	S.	Swan
KALGOORLIE	T.	Eastern Goldfields
Kalgoorlie	S.	Eastern Goldfields
Katanning	S.	Southern Agricultural
Kellerberrin	S.	Central Agricultural
Kojonup	S.	Southern Agricultural
Kondinin	S.	Central Agricultural
Koorda	S.	Central Agricultural
Kulin	S.	Central Agricultural
Kwinana	S.	Swan
Lake Grace	S.	Southern Agricultural
Laverton	S.	Eastern Goldfields
Leonora	S.	Eastern Goldfields
Mandurah	S.	South-West
Manjimup	S.	South-West
Marble Bar	S.	Pilbara
Meekatharra	S.	Central
MELVILLE	T.	Metropolitan
Menzies	S.	Eastern Goldfields
Merredin	S.	Central Agricultural
MIDLAND	T.	Metropolitan
Mingenew	S.	Northern Agricultural
Moora	S.	Northern Agricultural
Morawa	S.	Northern Agricultural
MOSMAN PARK	T.	Metropolitan
Mount Magnet	S.	Central
Mount Marshall	S.	Central Agricultural
Mukinbudin	S.	Central Agricultural
Mullewa	S.	Northern Agricultural
Mundaring	S.	Swan
Murchison	S.	Central
Murray	S.	South-West
Nannup	S.	South-West
Narembeen	S.	Central Agricultural
NARROGIN	T.	Central Agricultural
Narrogin	S.	Central Agricultural
NEDLANDS	C.	Metropolitan
NORTHAM	T.	Central Agricultural
Northam	S.	Central Agricultural
Northampton	S.	Northern Agricultural
Nullagine	S.	Pilbara
Nungarin	S.	Central Agricultural
Nyabing-Pingrup	S.	Southern Agricultural
Peppermint Grove	S.	Metropolitan
Perenjori	S.	Northern Agricultural
PERTH	C.	Metropolitan
Perth	S.	Metropolitan
Pingelly	S.	Central Agricultural
Plantagenet	S.	Southern Agricultural
Port Hedland	S.	Pilbara
Quairading	S.	Central Agricultural
Ravensthorpe	S.	Eastern Goldfields
Rockingham	S.	Swan
Roebourne	S.	Pilbara
Sandstone	S.	Central
Serpentine-Jarrahdale	S.	Swan
Shark Bay	S.	North-West
SOUTH PERTH	C.	Metropolitan
SUBIACO	C.	Metropolitan
Swan-Guildford	S.	(a)
Tableland	S.	Pilbara
Tambellup	S.	Southern Agricultural
Tammin	S.	Central Agricultural
Three Springs	S.	Northern Agricultural
Toodyay	S.	Central Agricultural
Trayning-Kununoppin-Yelbeni	S.	Central Agricultural
Upper Blackwood	S.	South-West
Upper Gascoyne	S.	North-West
Victoria Plains	S.	Northern Agricultural
Wagin	S.	Southern Agricultural
Wandering	S.	Central Agricultural
Wanneroo	S.	Swan
Waroona	S.	South-West
West Arthur	S.	Southern Agricultural
West Kimberley	S.	Kimberley
Westonia	S.	Central Agricultural
Wickepin	S.	Central Agricultural
Williams	S.	Central Agricultural
Wiluna	S.	Central
Wongan-Ballidu	S.	Northern Agricultural
Woodanilling	S.	Southern Agricultural
Wyalkatchem	S.	Central Agricultural
Wyndham-East Kimberley	S.	Kimberley
Yalgoo	S.	Central
Yilgarn	S.	Eastern Goldfields
YORK	T.	Central Agricultural
York	S.	Central Agricultural

(a) Guildford Ward and South Ward in Metropolitan Statistical Division, remainder in Swan Statistical Division.

WESTERN AUSTRALIA

SHOWING LOCAL GOVERNMENT AREAS
AND STATISTICAL DIVISIONS
AS AT 31st DECEMBER 1962

Scale: 1 inch to 75 miles

Miles 50 40 30 20 10 0 50 100 150 200 Miles

LOCAL GOVERNMENT AREAS:
CITIES — CITY OF PERTH
INCORPORATED TOWNS — ALBANY (T)
SHIRES — ALBANY
STATISTICAL DIVISIONS — KIMBERLEY
PRINCIPAL ROADS
RAILWAYS
PRINCIPAL AIR ROUTES
MEAN ANNUAL RAINFALL (inches) 10

INSET

Scale: 1 inch to 4 miles

PRINCIPAL ROADS
RAILWAYS
CITIES & TOWNS COLOURED GREEN

ENLARGEMENT

Scale: 1 inch to 30 miles

PRINCIPAL ROADS
RAILWAYS

Prepared by the Mapping Branch, Surveyor General's Division, Department of Lands and Surveys, Perth, Western Australia.

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Information on the same subject appearing on succeeding pages, whether in letterpress, tabular or diagrammatic form, has generally been indexed only to the first of such pages.

Several references to a particular subject may be found at intervals throughout the section *Chronological Notes from 1829*, pages 2–32 of Chapter I. Generally, in these cases, only the first reference appearing there has been indexed.

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Bee Keeping	Annually
Cereal Crop Forecast	Annually
Cereal Crops	Annually
Livestock and Woolclip	Annually
Machinery on Rural Holdings	Annually
Oats and Barley for Grain	Annually
Rural Land Utilization	Annually
SECONDARY PRODUCTION—	
Factory Statistics, Preliminary Summary	Annually
Factory Statistics (General Summary)	Annually
TRADE—	
External Trade (Oversea and Interstate)	Annually
Interstate Trade Supplement	Annually
WINE AND BRANDY—	
Wholesale Sales and Stocks of Wine and Brandy	Annually
GENERAL—	
Monthly Statistical Summary	Monthly